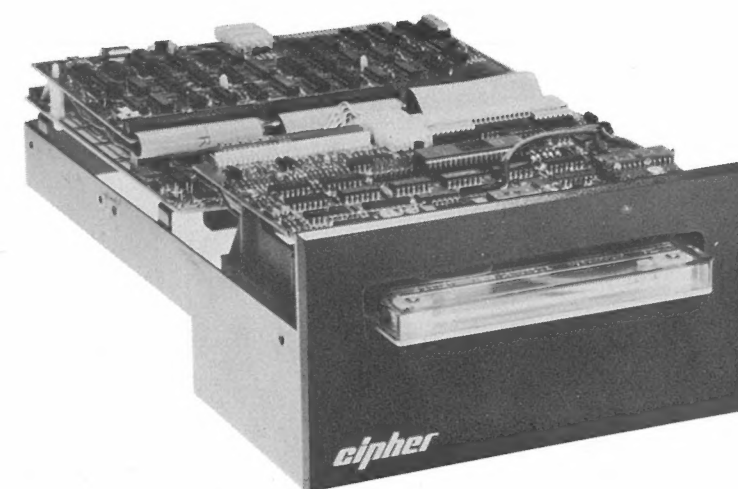


cipher[®]
data products, inc.

Quarterback[™]
1/4-Inch Cartridge Tape Drive
Engineering Drawing Package

Volume 2





QuarterbackTM
1/4-Inch Cartridge Tape Drive
Engineering Drawing Package

Volume 2

RECORD OF REVISIONS

Revision	Description	Date
A	Original Publication	5/82
B	Updated all sections, deleted Section 4. Revised per ACN 2783 and 31583.	12/83

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SECTION I

LOGIC SCHEMATICS

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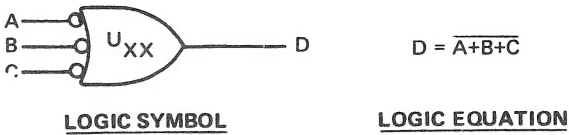


Figure I-1. Logic Symbol Example

I.1 INTRODUCTION

This volume contains all data essential to understand the logic functions of the Quarterback tape drive, as described in Volume 1. The information is presented in the following manner:

- Section 1 Logic Schematics
- Section 2 Assembly Drawings
- Section 3 Master Parts List

I.2 RELATED DOCUMENTS

To enhance user knowledge of the Quarterback tape drive, the following related documents are available:

- Product Description207102-001
- Maintenance Manual (Volume 1)207100-001
- Theory of Operation (Volume 3)207100-003

I.3 LOGIC DEFINITIONS AND SYMBOLOGY

In several portions of this documentation, primarily Volume 3, and in this Engineering Drawing Package, logic symbols are used to represent certain logical functions or integrated circuit elements. The accepted integrated circuit manufacturer's industry-standard symbols are used here.

Since DTL and TTL logic is being employed, it is of the typical inverting type that use NAND-NOR elements rather than AND-OR devices.

In the logic schematics, the input/output lines to each device are shown for the true (active) state of the function. A state indicator, shown as a small circle at the input or output of a device, signifies that, if that line is in the true state, it is at a 0-Volt potential (low). Lack of a state indicator signifies that, if that line is in the true state, it is at +5 Volts (high). An example of a logic symbol with definitions is shown in Figure I-1. The symbol depicts a logical NOR element which represents that output D is at +5 Volts if either input, A, B or C is at 0-Volt.

This figure shows a logical NOR element that says D is at +5 Volts (true state) if any one, or any combination of A, B, or C is at zero Volt. Typically, the reference designator of the particular chip in the assembly is shown within the symbol, and the corresponding integrated circuit (IC) pin numbers are shown on the lines external to the symbol. The numbers within the arrowheads on the logic schematics indicate the source or destination of the related signal by logic schematic page number. An arrowhead placed adjacent to a signal line indicates a connection at that point.

I.4 INTEGRATED CIRCUIT REFERENCE DATA

The one-shot produces a positive-going pulse at the "1" output and a negative-going pulse at the "0" output, and these are initiated at the time the input pulse makes a transition to its true state. The flip-flops are of the J-K type and have the input/output functions listed in Table I-1. Tables I-2 and I-3 are truth tables applicable to these devices.

Table I-1. Flip-Flop I/O Functions

Designation	Function
J	Synchronous set input
K	Synchronous reset input
T	Clock input
S _D	Direct set input
C _D	Direct clear (or Reset) input
1	Set output
0	Reset output

Table I-2. Truth Table for Synchronous Operation

Before Clocks				After Clock	
Outputs		Inputs		Outputs	
I	0	J	K	I	0
L	H	L	X	L	H
L	H	H	X	H	L
H	L	X	L	H	L
H	L	X	H	L	H

Table I-3. Truth Table for Asynchronous Operation

Inputs		Outputs	
SD	CD	I	0
L	L	H	H
L	H	H	L
H	L	L	L
H	H	Synchronous Operation	H



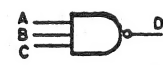


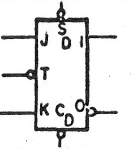
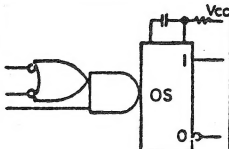
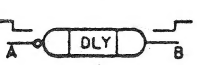
1.5 LOGIC SCHEMATICS

The following listed logic schematics are provided:

	Dwg. No.
Schematic, Main PWB . . . . .	.207002-200
Schematic, Controller PWB . . . . .	.207005-200
Schematic, Microcomputer Expander PWB . . . . .	.207011-200
Schematic, Motor Driver PWB . . . . .	.207017-200
Schematic, Main PWB . . . . .	.207066-200
Schematic, Motor Driver PWB . . . . .	.207069-200
Schematic, Motor Driver PWB . . . . .	.207076-200

Table I-4 shows all the logic symbols used in this manual with their corresponding names and logical equations. The equations shown are defined by the true level of the input signal.

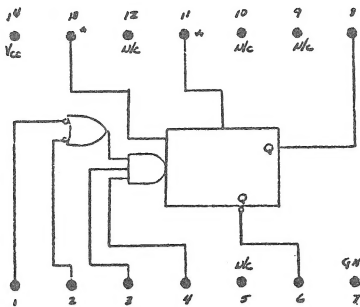
Table I-4. Logic Symbols

SYMBOL	NAME	LOGICAL EQUATION
	NEGATIVE INVERTER	$B = \overline{A}$
	POSITIVE INVERTER	$B = \overline{A}$
	POSITIVE NAND GATE	$D = \overline{ABC}$
	NEGATIVE NOR GATE	$D = \overline{A+B+C}$
	NEGATIVE WIRED OR GATE	$D = A+B+C$
	FLIP-FLOP (J-K)	SEE TRUTH TABLE
	ONE-SHOT	SEE EXPLANATION
	TIME DELAY NETWORK	$B = A \cdot [DLY]$

NOTES:

1. CASE - 14 Pin Dip, Dimensions Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - PLASTIC
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets

VENDOR	PART NO.	COMMENTS
AMD	AM9601PC	
FAIRCHILD	F9601PC	01d P/N U6A960159X
ITT SEMI	ITT9601-N	
NATIONAL SEMI	DM9601N	
RAYTHEON	RF9601N	
STEWART WARNER	SW9601M	



* FOR EXTERNAL TIMING

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Part No. 100090-001

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I.C., RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
(9601)

CODE
109

DRAWN C. Kelberlau 1/24/77
CHECK J. Watson 1/24/77
APPR. J. Watson 1/24/77

100090-000

G

REVISIONS

DO NOT SCALE
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SHEET 1 of 1

FORM 495 (12/76)

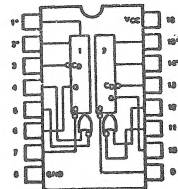
NOTES

1. CASE: 16 Pin Plastic DIP Per CDP
Spec. Dwg. No. 124000-002
2. ELECTRICAL: Per applicable vendor
data sheet

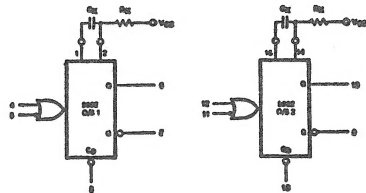
VENDOR	VENDOR PART NO.
AMD	AM9602PC
FAIRCHILD	9602PC
NATIONAL	DM8602N
SIGNETICS	N9602N

- 100234-001 - STANDARD PART
100234-101 - BURNED-IN IN ACCORDANCE WITH
CDP SPEC. NO. 190000

100234-000



* Pins for external timing.



PART NUMBER 100234-XXX

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I.C., MONOSTABLE MULTIVIBRATOR DUAL
RETRIGGERABLE (9602)

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109

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CHECK J. Watson 1/17/77
APPR. J. Watson 1/17/77

100234-000
CODE IDENT 52465
SHEET 1 of 1

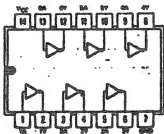
FORM 201 (R. 8/77)

NOTES

1. CASE: 14 Pin Plastic DIP Per CDP
Spec. Dwg. No. 124000-001
2. ELECTRICAL: Per applicable vendor
data sheet

VENDOR	VENDOR PART NO.
TEXAS INST.	SN7406N
SIGNETICS	N7406A
MOTOROLA	MC7406P
FAIRCHILD	9N06P
NATIONAL SEMI.	DM7406N

- 100331-001 - STANDARD PART
100331-101 - BURNED-IN IN ACCORDANCE WITH
CDP SPEC. NO. 190000



100331

PART NUMBER 100331-XXX

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data products, inc.

I.C., HEX INVERTER BUFFER, OC
(7406)

CODE
109

DRAWN C. Kelberlau 1/17/77
CHECK J. Watson 1/17/77
APPR. J. Watson 1/17/77

100331

B₁

CODE IDENT 52465
SHEET 1 of 1

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	Manufacturing Release	J. Watson	1/17/77	

Integrated Circuit, Phase-Frequency
Detector

Motorola P/N MC4044P

PART NO. 100345-001

NOTES UNLESS SPECIFIED	DRAWN	G. Scott	8-30-72
1. TOLERANCES .XX± ANGULAR .XXX± ±	CHECK		
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		
	MODEL No.		
	NEXT ASSY		

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INTEGRATED CIRCUIT,
PHASE FREQUENCY DETECTOR

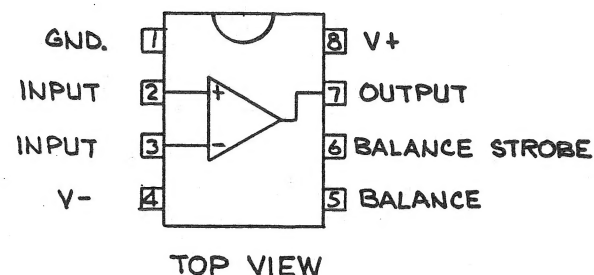
CODE

QTY.
REQ'D.


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DO NOT SCALE THIS DRAWING	WEIGHT		
		SHEET 1 of 1	

101022-000

NATIONAL SEMICONDUCTOR - P/N LM311N
MICRO SYSTEM INTERNATIONAL (MIL) - P/N LM311S
SILICON GENERAL - P/N SG311M
MOTOROLA - P/N MLM 311P1
INTERSIL - LM311N
TEXAS INST. - LM311P (FORMERLY SN72311P)
AMD - AM311N
FAIRCHILD - μ A311TC



PART NUMBER 101022-001


APP/DATE	DESCRIPTION	DO NOT SCALE DRAWING	TOLERANCES XX± _____ ANGULAR XXX± _____ ± _____			PART NUMBER 101022-001	
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B	ADDED MTL.						
C	SILICON GEN.						
D	ADDED T.I. & INTERSIL						
E	ADDED AMD						
E1	CR/O 9361						
E2	CR/O 9564						
E3	CR/O 9650						
E4	CR/O 9650						
E5	CR/O 9650						
E6	CR/O 9650						
E7	CR/O 9650						
E8	CR/O 9650						
E9	CR/O 9650						
E10	CR/O 9650						
E11	CR/O 9650						
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E93	CR/O 9650						
E94	CR/O 9650</						

FORM 201 (R 1-79) BISHOP GRAPHICS/ACCUPRESS
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101031-000

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Texas Instruments	SN75452P
National	DS75452N
Motorola	MC75452P
Signetics	N75452B
Fairchild	75452BTC

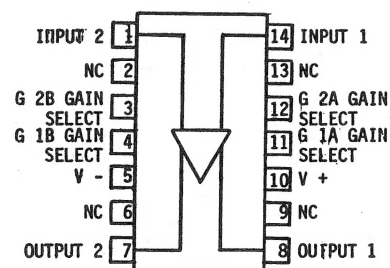
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A	MFG REL	—	TOLERANCES												INTEGRATED CIRCUIT, DUAL PERIPHERAL POSITIVE NAND DRIVER		CODE		
B	SEE REV E02-26-73	—	.XX± ANGULAR .XXX± ±																
B1	ADD -101	11-27-78	MODEL ———										DRAWN		G. Scott	9-18-72	101031-000	C	
B2	CR/O 9058	3-13-79	NEXT ASSY ———										CHECK		CUMMISKEY	10-17-80			
C	ECO 10978	3-13-79											APPR		Don Van Dyke	10/17/80	CODE	52455	SHEET 1 OF 1




FORM 201 (R 1-79) BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A 5024

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2. ELECTRICAL - PER APPLICABLE VENDOR DATA SHEET.

VENDOR	VENDOR PART NO.
SIGNETICS	NE592N
AMD	AM592PC
INTERSIL	NE592N
MOTOROLA	NE592N



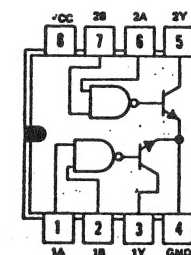
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C	ECO 12644												.XX±					ANGULAR							
													.XXX±	±											
													MODEL	I.C., VIDEO AMPLIFIER, DIFFERENTIAL				CODE							
													NEXT ASSY					109							
													THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED ON UNLESS FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.				DRAWN				MATTHES	4/21/81			
																	CHECK	CUMMISKEY	4/21/81	101032-000		C			
																	APPR	Jess Kendrick	5/5/81	CODE 109	52465	SHEET 1	OF 1		

FORM 201 (R 1-79)  BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-6034

1. CASE: 8 Pin Plastic DIP Per CDP
Spec Dwg. No. 124000-003
2. ELECTRICAL: Per applicable vendor
data sheet

VENDOR	VENDOR PART NO.
TEXAS INSTRUMENTS	SN75451BP
MOTOROLA	MC75451P
NATIONAL SEMI	DS75451N



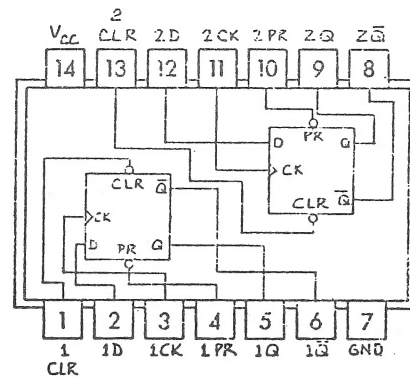
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101139-101 - BURNED-IN IN ACCORDANCE WITH
CDP SPEC NO. 190000

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B	ADD - 101	11/7											109
C	ECO 10704	11/7											
D	ECO 12245	11/7											
D	ECO 12282	11/7											
			<p>THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE REPRODUCED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.</p>										
DRAWN	C. Keilberlau	11/77	<p>I.C., DUAL PERIPHERAL POSITIVE AND DRIVER</p> <p>(75451)</p>										
CHECK	A. Watson	11/77	<p>101139-000</p>										D
APPR	Joe Kordyl	11/77	<p>CODE 52465 SHEET 1 OF 1</p>										

FORM 201 (R. 8/77)


1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets
3. OPERATING TEMP. - 0°C to $+70^{\circ}\text{C}$

VENDOR	VENDOR PART NO.
TEXAS INST.	SN74S74N
SIGNETICS	N74S74N
NATIONAL	DM74S74N
FAIRCHILD	74S74PC



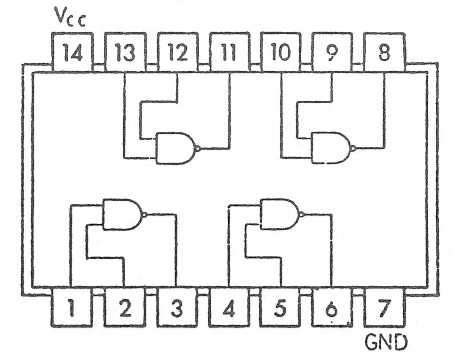
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123023-101 - BURNED-IN IN ACCORDANCE
WITH CIPHER DATA SPEC
NO. 190000.

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data products, inc.

							CODE	
					I.C., DUAL "D" TYPE FLIP-FLOP W/PRESET AND CLEAR, SCHOTTKY (74S74)		109	
C	ECO 10719.	JEH:SC	7/30/80	(Signature)	DRAWN	C. Kelberlau	7/25/77	123023-000
B	CR/EC 7562	JEH:SC	8/17/79	(Signature)	CHECK		7/25/77	
A1	A1		7/25/77	(Signature)	APPR.		7/25/77	
REV.	DESCRIPTION	CHK.	DATE	APPROVED				
REVISIONS					DO NOT SCALE THIS DRAWING			SHEET 1 of 1

1. PACKAGE - 14 Pin Plastic DIP Per
Spec. Dwg. No. 124000-001
2. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets
3. OPERATING TEMP. - 0°C to +70°C

VENDOR	PART NO.
Texas Inst.	SN74S00N
Fairchild	74S00PC



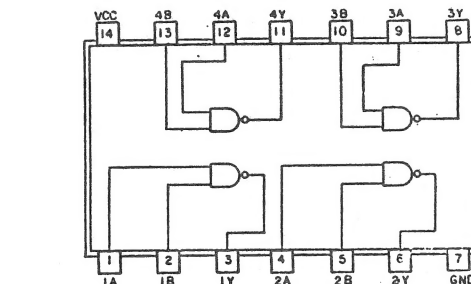
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123028-101 - BURNED-IN IN ACCORDANCE
WITH CIPHER DATA SPEC
NO. 190000

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data products, inc.

					<div><div>cipher data products, inc.</div><div>I.C., SUPER HIGH SPEED QUAD TWO INPUT NAND (74S00)</div></div>				CODE 109
D	CR/O	9562	JENSEN	9/17/79	9/17/79				
B	CR/O	8227			11/15/77				
B	CR/O	7949			8/1/77				
1/2	NEW FORMAT				7/24/77				
REV.	DESCRIPTION		CHK.	DATE	APPROVED				
					DRAWN C. Kelberlau 7/22/77				123028-000
					CHECK 4/2/2003 7/21/77				
					APPR. 4/2/2003 7/23/77				
REVISIONS					DO NOT SCALE THIS DRAWING				SHEET 1 of 1




1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS00 (N,J)
Signetics	N74LS00 (A,F)
Texas Inst.	SN74LS00 (N,J)
Fairchild	F74LS00 (P,D)C
Motorola	SN74LS00N



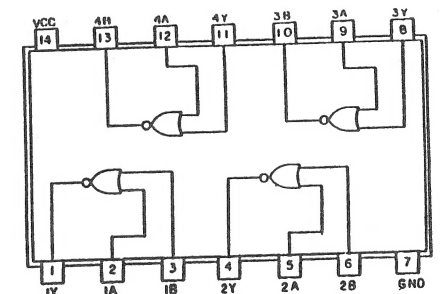
123029-001 STANDARD PART
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SPEC. NO. 190000

cipher
data products, inc.

<table><tr><td>B</td><td>ECO 12775</td><td>Ham</td><td>7/7/83</td><td>(8)</td></tr><tr><td>A2</td><td>ADD -101</td><td>CL</td><td>7/21/77</td><td>(3)</td></tr><tr><td>A1</td><td>NEW FORMAT</td><td>CL</td><td>7/21/77</td><td>(3)</td></tr><tr><td>REV.</td><td>DESCRIPTION</td><td>CHK.</td><td>DATE</td><td>APPROVED</td></tr></table>					B	ECO 12775	Ham	7/7/83	(8)	A2	ADD -101	CL	7/21/77	(3)	A1	NEW FORMAT	CL	7/21/77	(3)	REV.	DESCRIPTION	CHK.	DATE	APPROVED	<table><tr><td colspan="3"></td><td colspan="2">COD</td></tr><tr><td colspan="3">I.C., QUAD 2-INPUT NAND GATE, LOW-PWR. SCHOTTKY (74LS00)</td><td colspan="2">109</td></tr><tr><td>DRAWN</td><td>C. Kelberlau</td><td>7/22/77</td><td colspan="2" rowspan="3">123029-000</td></tr><tr><td>CHECK</td><td>W. Watson</td><td>7/22/77</td></tr><tr><td>APPR.</td><td>Joe Kendrick</td><td>7/22/77</td></tr></table>								COD		I.C., QUAD 2-INPUT NAND GATE, LOW-PWR. SCHOTTKY (74LS00)			109		DRAWN	C. Kelberlau	7/22/77	123029-000		CHECK	W. Watson	7/22/77	APPR.	Joe Kendrick	7/22/77	B	
B	ECO 12775	Ham	7/7/83	(8)																																																
A2	ADD -101	CL	7/21/77	(3)																																																
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CHECK	W. Watson	7/22/77																																																		
APPR.	Joe Kendrick	7/22/77																																																		
REVISIONS					DO NOT SCALE THIS DRAWING		SHEET 1 of 1																																													


ELECTRICAL: Per the Applicable Vendor Data Sheets.

VENDORS:	PART NUMBERS
NATIONAL	DM74LS02 (N,J)
SIGNETICS	N74LS02 (A,F)
TEXAS INST.	SN74LS02 (N,J)
FAIRCHILD	F74LS02 (P,D) C



123030-001 Standard Part
123030-101 Burned-In In Accordance With
COP Spec. No. 190000

cipher

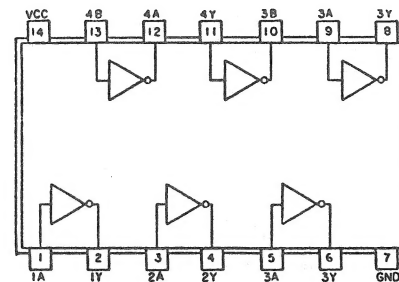
								CODE	
					I.C. QUAD 2-INPUT NOR GATE; LOW - PWR SCHOTTKY (74LS02)			109	
A ₂	ADD -101	OK	3/8/78	(4)	DRAWN	M.R. HOWARD	8/12	123030	A ₂
A ₁	NEW FORMAT	OK	9/15/77	(5)	CHECK	M. White	9/15/77		
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	Rosa Kendrick	9/15/77		
REVISIONS					DO NOT SCALE THIS DRAWING			SHEET 1 of 1	

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NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS04 (N,J)
Signetics	N74LS04 (A,F)
Texas Inst.	SN74LS04 (N,J)
Fairchild	F74LS04 (P,D)C



POSITIVE LOGIC:
Y = X

123031-001 - STANDARD PART
123031-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000

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Part No. 123031-XXX

cipher
data products, inc.

I.C., HEX INVERTER, LOW-PWR.
SCHOTTKY (74LS04)

CODE

109

B	CRIO 9562	SENSE	HP	8/17/77	9/17/77	✓	DRAWN	C. Kelberlau	7/21/77
A ₂	NEW FORMAT		OK	7/22/77		✓	CHECK	J. Watson	7/21/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.			Jess Kendrick	7/22/77

123031-000

B

REVISIONS

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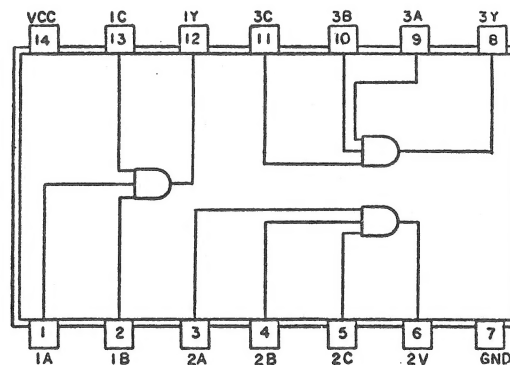
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS11 (N,J)
Signetics	N74LS11 (A,F)
Texas Inst.	SN74LS11 (N,J)
Fairchild	F74LS11 (D,P)C
MOTOROLA	SN74LS11N



POSITIVE LOGIC:
Y = ABC

123034-001 - STANDARD PART
123034-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

Part No. 123034-XXX

cipher
data products, inc.

I.C., TRIPLE 3-INPUT AND GATE,
LOW-PWR. SCHOTTKY (74LS11)

CODE

109

					LOW-PRI. SCH				
B	ECO 13024	JAZ	11/30/83	11/30/83	2				
A ₂	ADD -101	OK	4/21/77	4/21/77	2	DRAWN	C. Kelberlau	7/21/77	
A ₁	NEW FORMAT	OK	7/21/77	7/21/77	2	CHECK	J. Watson	7/21/77	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.				
							Jess Kendrick	7/21/77	

123034-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

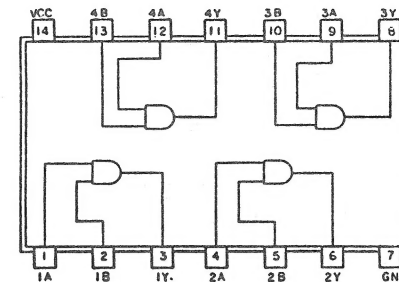
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS08 (N,J)
Signetics	N74LS08 (A,F)
Texas Inst.	SN74LS08 (N,J)
Fairchild	F74LS08 (D,P)C



POSITIVE LOGIC:
Y = AB

123032-001 Standard Part
123032-101 Burned-In in accordance with CDP Spec. No. 190000.

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Part No. 123032-XXX

cipher
data products, inc.

I.C., QUAD 2-INPUT AND GATE,
LOW-PWR. SCHOTTKY (74LS08)

CODE

109

B	CR10 97451A M.L.	7/20/80	11/11/80	(K)	DRAWN	C. Kelberlau	7/22/77
A ₂	NEW FORMAT	OK	7/22/77	(C)	CHECK	J. Watson	7/22/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	Jess Kendrick	7/22/77

123032-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

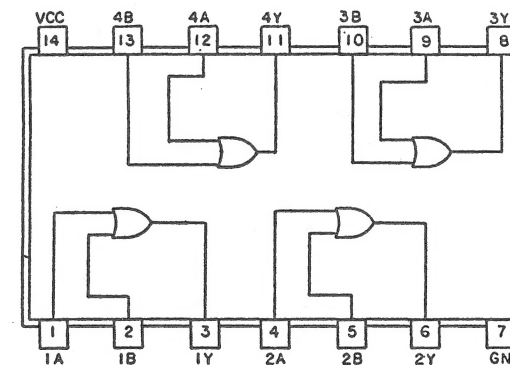
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS32 (N,J)
Signetics	N74LS32 (A,F)
Texas Inst.	SN74LS32 (N,J)
Fairchild	F74LS32 (D,P)C



POSITIVE LOGIC:
Y = A+B

123035-001 Standard Part
123035-101 Burned-In in accordance with CDP Spec. No. 190000.

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

Part No. 123035-XXX

cipher
data products, inc.

I.C., QUAD 2-INPUT OR GATE,
LOW-PWR. SCHOTTKY (74LS32)

CODE

109

B	CRIO 97451A M.L.	7/20/80	11/11/80	(P)	DRAWN	C. Kelberlau	7/20/77
A ₂	NEW FORMAT	OK	7/20/77	(X)	CHECK	W. Watson	7/20/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	Jess Kendrick	7/21/77

123035-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS74 (N,J)
HITACHI	HD74LS74AP
Texas Inst.	SN74LS74 (N,J, AN)
Fairchild	74LS74 (D,P)C
Signetics	N74LS74AN
Motorola	SN74LS74A (N,J)

Part No. 123036-001 STANDARD PART
123036-101 BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

Part No. 123036-XXX SEE TABULATION

cipher
data products, inc.

I.C., DUAL D-TYPE FLIP-FLOP W/PRESET & CLEAR, LOW-PWR. SCHOTTKY (74LS74)

DRAWN C. Kelberlau 7/20/77
CHECK J. Watson 7/24/77
APPR. Jess Kendrick 7/21/77

123036-000

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SHEET 1 of 1

FORM 495 (12/76)

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NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001 or Per Pkg. Code Under Vendor Part No.
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin, or Bright Solder Dipped)
- ELECTRICAL CHARACTERISTICS - Per the Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
Fairchild	F74LS86 (P,D)C
Texas Inst.	SN74LS86 (J,N)
Motorola	SN74LS86 (J,N)
National	DM74LS86 (J,N)
Signetics	N74LS86 (N,F)

123038-001 STANDARD PART
123038-101 BURNED-IN IN ACCORDANCE WITH SPEC. NO. 190000

Part Number 123038-XXX

cipher
data products, inc.

I.C., QUAD. 2-INPUT EXCLUSIVE OR GATE, LOW-PWR. SCHOTTKY (74LS86)

DRAWN C. Kelberlau 7/21/77
CHECK J. Watson 7/21/77
APPR. J. Kendrick 7/21/77

123038-000

DO NOT SCALE DRAWING

TOLERANCES .XX± .XXX± ANGULAR ±

MODEL NEXT ASSY

FORM 201 (R 11/80) BISHOP GRAPHICS/ACCUPRESS

NOTES:

- CASE - 16 Pin Plastic DIP Per Spec. Dwg. No. 124000-002
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS123 (N,J)
Signetics	N74LS123 (B,F)
Texas Inst.	SN74LS123 (N,J)
Fairchild	F74LS123 (D,P)C

Part No. 123039-001

cipher
data products, inc.

I.C., DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR W/CLEAR, LOW-PWR. SCHOTTKY (74LS123)

DRAWN C. Kelberlau 7/21/77
CHECK J. Watson 7/21/77
APPR. Jess Kendrick 7/21/77

123039

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123045-001	TEXAS INSTRUMENTS	SN74LS175 (J,N)
123045-001	FAIRCHILD	F74LS175 (D,P)C
123045-001	NATIONAL	DM74LS175 (J,N)
123045-001	SIGNETICS	N74LS175 (B,F)
123045-001	AMD	AM74LS175 (N,J)
123045-001	MOTOROLA	SN74LS175 (N)
123045-002	AMD	AM25LS175 (N)

123045-0XX STANDARD PART
123045-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

Part Number 123045 - XXX(SEE TABULATION)

cipher
data products, inc.

I.C., QUAD., D-TYPE FLIP-FLOP, WITH CLEAR (25/74LS175)

DRAWN C. KELBERLAU 7-20-77
CHECK J. WATSON 7-20-77
APPR. JESS KENDRICK 7-20-77

123045-000

DO NOT SCALE DRAWING

TOLERANCES .XX± .XXX± ANGULAR ±

MODEL NEXT ASSY

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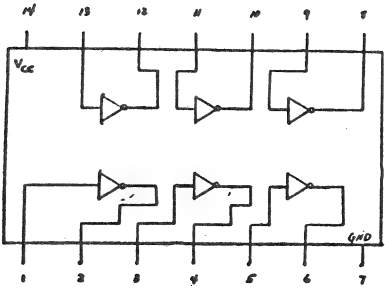
FORM 201 (R 11/80)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Ceramic or Plastic
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the
Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
Signetics	N74S04 (A,F)
Fairchild	F74S04 (P,D)C
National	DM74S04 (N,J)
Texas Inst.	SN74S04 (N,J)

123046-001 Standard Part
123046-101 Burned-In In Accordance With
CIP Spec. No. 190000



Part No. 123046-XXX

cipher
data products, inc.

I.C., HEX INVERTER, SCHOTTKY
(74S04)

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123046

1

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SHEET 1 of 1

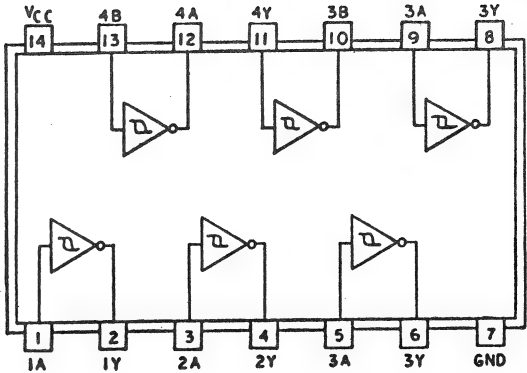
FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic Dip Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or ceramic
Leads - Plated (Gold, Tin, or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets

VENDOR	VENDOR PART NO.
National	DM74LS14 (N,J)
Signetics	N74LS14 (A,F)
Texas Inst.	SN74LS14 (N,J)
Fairchild	F74LS14 (P,D)C

123047-001 - STANDARD PART
123047-101 - BURNED-IN IN ACCORDANCE WITH
CIP SPEC NO. 190000.



POSITIVE LOGIC:
Y = A

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ANY PART DISCLOSED HEREIN WITHOUT THE
PRIOR WRITTEN PERMISSION OF THE CIPHER
DATA PRODUCTS, INC.



Part No. 123047-XXX

cipher
data products, inc.

I.C., HEX INVERTER, SCHMITT-TRIGGER, LOW-PWR
SCHOTTKY (74LS14)

CODE

109

A ₂	ADD -101	an	7/15/77	
A ₂	NEW FORMAT	an	7/20/77	
REV.	DESCRIPTION	CHK.	DATE	APPROVED

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123047

A2

REVISIONS

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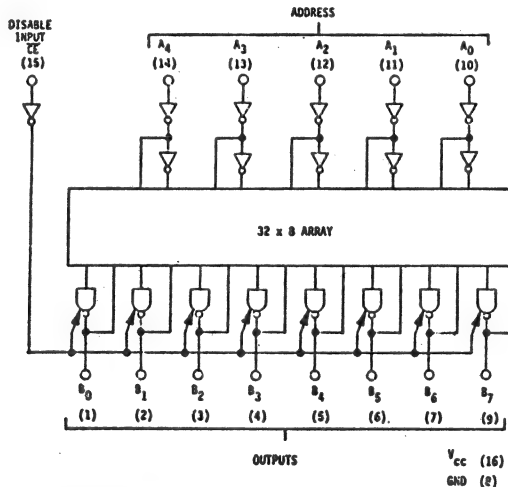
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 16 Pin Plastic DIP Per Spec:
Dwg. No. 124000-002
2. MATERIAL: Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL CHARACTERISTICS - Per the Applicable
Vendor Data Sheets
4. The Integrated Circuit described in this spec.
must be further modified by programming prior
to use.

VENDOR	VENDOR PART NO.
SIGNETICS	N82S123B or N82S123F
INTERSIL	IM5610CPE or IM5610CJE



NOTE: Outputs are disabled (at high
impedance state) when CE is
at logical high state.

Part No. 123056-001

cipher
data products, inc.

I.C., ROM-PROGRAMMABLE, 256 BIT TRI-STATE OUTPUTS
123056

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123056

A1

REVISIONS

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THIS DRAWING

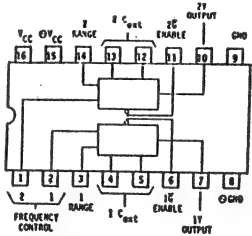
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE: 16 Pin Plastic DIP Per Spec
Dwg. No. 124000-002
- ELECTRICAL: Per The Applicable Vendor
Data Sheets.

VENDOR	PART NUMBER
TEXAS INSTRUMENTS	SN74S124N or SN74S124J



LOGIC: OUTPUT (7) IS DISABLED WHEN ENABLE INPUT (5) IS LOW
OUTPUT (7) IS DISABLED HIGH WHEN ENABLE INPUT (5) IS HIGH

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PRIOR WRITTEN PERMISSION OF THE CIPHER
DATA PRODUCTS, INC.


PART NUMBER 123069-001

cipher
data products, inc.

INTEGRATED CIRCUIT DUAL VOLTAGE-CONTROLLED
OSCILLATORS, SCHOTTKY - 74S124

CODE

109

A ₁	NEW FORMAT	✓	8/5/77	
REV.	DESCRIPTION	CHK.	DATE	APPROVED

DRAWN	M.R. HOWARD	8/12
CHECK		
APPR.		

123069

A1

REVISIONS

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THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

NOTES:
1. CASE - 16 Pin Plastic Dip Per Spec Dwg. No. 124000-002
2. ELECTRICAL - Per Applicable Vendor Data Sheets

VENDOR	PART NUMBER
TEXAS INST.	SN74LS109N
AMD	AM74LS109PC
FAIRCHILD	74LS109PC
NATIONAL	DM74LS109N
SIGNETICS	N74LS109B
MOTOROLA	SN74LS109AN

FUNCTION TABLE					
INPUTS				OUTPUTS	
PRESY	CLEAR	CLOCK	J	K	Q
L	H	X	X	X	M
H	L	X	X	X	L
L	L	X	X	X	H
H	H	X	X	X	H
H	H	X	X	L	L
H	H	X	L	H	TOGGLE
H	H	X	L	H	Q ₀ Q ₁
H	H	X	L	H	L
H	H	X	L	H	Q ₀ Q ₁

123084-001 - STANDARD PART
123084-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000.

PART NUMBER 123084-XXX

I.C., DUAL J-K POSITIVE EDGE TRIGGERED FLIP-FLOP, LOW PWR SCHOTTKY (74LS109)

CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
C	ECO 13022	Jax	11/28/83	11/30/83			
B	CR/D 9562	SEHJR	9/17/79		DRAWN M.R. HOWARD 8/11		
A ₁	NEW FORMAT		8/12/77		CHECK D. WATSON 8/11/77	123084-000	C

NOTES:
CASE: 16 Pin Plastic Dip Per Spec. Dwg. No. 124000-002
ELECTRICAL - Per Applicable Vendor Data Sheets.

VENDOR	PART NUMBER
TEXAS INST.	SN74LS139N
AMD	AM74LS139PC
FAIRCHILD	74LS139PC
NATIONAL	DM74LS139N
SIGNETICS	N74LS139B
MOTOROLA	SN74LS139N

123085-001 Standard Part
123085-101 Burned-In in accordance with CDP Spec. No. 190000.

PART NO. 123085-XXX

I.C., DUAL 2-TO-4 LINE DECODER DUAL 1-TO-4 LINE DEMULTIPLEXER LOW PWR SCHOTTKY (74LS139)

CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
C	ECO 13024	Jax	11/28/83	11/30/83			
B	CR/D 9745/A	M.L.	1/10/80	1/11/80	DRAWN M.R. HOWARD 8/10		
A ₁	NEW FORMAT		8/15/77		CHECK D. WATSON 8/15	123085-000	C

NOTES:
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 14 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-001

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123086-001	TEXAS INSTRUMENTS FAIRCHILD NATIONAL SIGNETICS AMD	SN74LS164N 74LS164PC DM74LS164N N74LS164A AM74LS164PC
123086-002	AMD	AM25LS164PC

123086-0XX STANDARD PART
123086-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER 123086-XXX (SEE TABULATION)

I.C., 8-BIT SERIAL-IN, PARALLEL OUT SHIFT REGISTER (25/74LS164)

CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
C	ECO 12002	Jax	11/28/83	11/30/83			
B	CR/D 9562	SEHJR	9/17/79		DRAWN M.R. HOWARD 8/15		
A ₁	NEW FORMAT		8/12/77		CHECK T. WATSON 8-15-77	123086-000	C

NOTES:
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123090-001	FAIRCHILD AMD NATIONAL MOTOROLA SIGNETICS T.I.	74LS163PC AM74LS163APC DM74LS163N SN74LS163AN N74LS163AN SN74LS163AN
123090-002	AMD	AM25LS163APC

123090-0XX STANDARD PART
123090-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER 123090-XXX (SEE TABULATION)

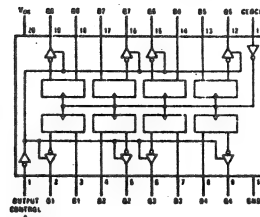
I.C., 4-BIT BINARY COUNTER WITH SYNCHRONOUS RESET (25/74LS163)

CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
C	ECO 12006	Jax	11/28/83	11/30/83			
B	CR/D 9562	SEHJR	9/17/79		DRAWN BAKER 1/27/82		
A ₁	NEW FORMAT		8/15/77		CHECK Van Maphraun 2/5/82	123090-000	D

1. CASE - 20 Pin Plastic Dip
2. ELECTRICAL - Per applicable vendor data sheets

VENDOR	VENDOR PART NO.
AMD	AH74LS374PC
NATIONAL	DM74LS374N
FAIRCHILD	74LS374PC
TI	SN74LS374N
SIGNETICS	N74LS374N
MMI	SN74LS374N



123091-001 Standard Part
123091-101 Burned-In in accordance with
CDP Spec. No. 190000.

Part No. 123091-XXX

cipher
data products, inc.

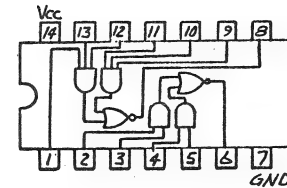
OCTAL D FLIP-FLOPS, TRI-STATE
LOW PWR SCHOTTKY (74LS374)

					LOW PWR SCHUTTKY (745374)			109	
C	E.C.O. 10096 H.L.	3450	3/4/80	3					
B	30.0.0.0.0 H.L.	10.10	1/1/80	3	DRAWN	C. Kelberlau	1/12/77		
A ₁	NEW EXHIBIT	14	7/14/77	3	CHECK	1/12/77	123091-000		C
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.				
REVISIONS					DO NOT SCALE THIS DRAWING		SHEET 1 of 1		

FORM 495 (12/76)

1. CASE - 14 Pin Plastic Dip Per Spec.
Dwg. No. 124000-001
2. ELECTRICAL - Per Applicable Vendor
Data Sheets

VENDOR	VENDOR PART NUMBER
AMD	AM74LS51PC
FAIRCHILD	74LS51PC
NATIONAL	DM74LS51N
SIGNETICS	N74LS51A
T. I.	SN74LS51N



LOGIC/PIN CONFIGURATION*

Part No. 123093-001

cipher
data products, inc.

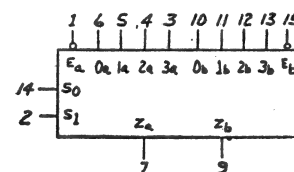
2-WIDE 2-INPUT/3-INPUT AND-OR
E LOW PWR SCHOTTKY (74LS51)

					DRAWN	C. Keiberlau	7/6/77			123093	A
A ₃	NEW FORMAT	OK	7/6/77		CHECK		7/6/77				
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.		7/7/77				
REVISIONS					DO NOT SCALE THIS DRAWING			SHEET 1 of 1			

FORM 495 (12/76)

1. GASE - 16 Pin Plastic Dip Per Spec.
Dwg. No. 124000-002.
2. ELECTRICAL - Per Applicable Vendor
Data Sheets

VENDOR	VENDOR PART NO.
AMD	AM74LS153PC
FAIRCHILD	74LS153PC
NATIONAL	DM74LS153N
SIGNETICS	N74LS153B
T. I.	SN74LS153N







LOGIC/PIN CONFIGURATION

Part No. 123095-001

cipher
data products, inc.

LINE TO 1-LINE DATA SELECTORS/
TERS, LOW PWR SCHOTTKY (74LS153)

					DRAWN	C. Kelberlau	7/1/77	123095	A ₁
A ₁	NEW FORMAT		7/1/77		CHECK		7/1/77		
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.		7/1/77		
REVISIONS					DO NOT SCALE THIS DRAWING			SHEET 1 of 1	

FORM 495 (12/76)

1. ELECTRICAL CHARACTERISTICS; PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

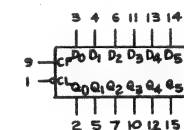
CIPHER PART NO.	VENDOR	VENDOR PART NO.
123096-001	AMD FAIRCHILD NATIONAL SIGNETICS TEXAS INSTRUMENTS MOTOROLA AMD	AM74LS174PC 74LS174PC DM74LS174N N74LS174N SN74LS174N SN74LS174H AM25LS174PC
123096-002		

123096-OXX STANDARD PART

123096-1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

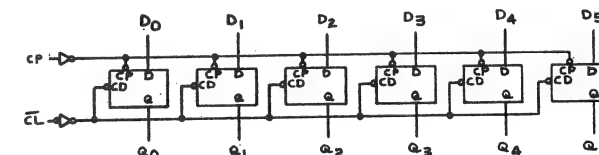
123096-000

LOGIC SYMBOL
LS174



Vcc = PIN 15
GND = PIN 8

LOGIC DIAGRAM LS174



PART NUMBER: 123096-XXX (SEE TABULATION)

DO NOT SCALE DRAWING	
TOLERANCES	ANGULAR
.XX±	±
.XXX±	
MODEL	
NEXT ASSY	

cipher
data products, inc.
GARDEN GROVE DIVISION

	I.C., HEX D FLIP-FLOP WITH CLEAR (25/74LS174)
--	--

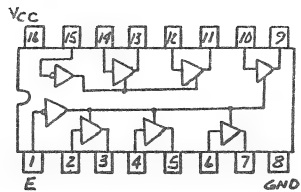
REV	DESCRIP	ASSY	DRAWN	M. R. HOWARD	8/10	123096-000	D
REV &		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART PRODUCED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	CHECK	T. WATSON	9/10/11		
ECO 12	ECO 12		APPR	J. KENDRICK	8/10/11		
ECO 13	ECO 13					CODE IDENT 52465	SHEET 1 of 1

FORM 201 (R 11/80)

NOTES:

1. CASE - 14 Pin Plastic Dip Per Spec. Drawing No. 124000-002.
2. ELECTRICAL - Per Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
AMD	AM74LS367PC
FAIRCHILD	74LS367PC
NATIONAL	DM74LS367N
SIGNETICS	N74LS367B
T. I.	SN74LS367N
Motorola	SN74LS367AH



LOGIC/PIN CONFIGURATION

123097-001 - STANDARD PART
123097-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000.

Part No. 123097-XXX

cipher
data products, inc.

HEX 3-STATE BUFFER, SEPARATE 2-BIT SECTIONS,
LOW PWR SCHOTTKY (74LS367)

CODE
109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.
B	CR/O 9562	JEAS	9/17/79	(S)	
A2	CR/O 9190	San J	9/11/79	(S)	
A1	NEW FORMAT	CA	7/1/77	(S)	

DRAWN C. Kelberlau 7/1/77
CHECK T. Watson 7/1/77
APPR. J. Kendrick 7/1/77

123097-000

B

REVISIONS

DO NOT SCALE
THIS DRAWING

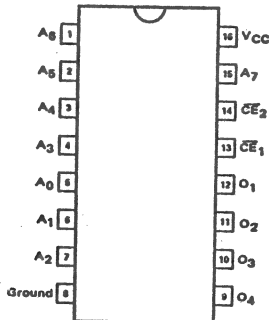
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 16 Pin Plastic or Ceramic Per Spec. Dwg., No. 124000-002.
2. MECHANICAL & ELECTRICAL - Per Applicable Vendor Data Sheet

VENDOR	VENDOR PART NO.
Signetics	N82S129N, N82S129F
Fairchild	93427PC, 93427DC
NATIONAL	DM74S287N



Part No. 123106-001

cipher
data products, inc.

I.C., 1024-BIT BIPOLAR
PROGRAMMABLE ROM (256X4 PROM)
WITH TRI-STATE OUTPUTS

CODE
109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.
E	ECO 12298	Jax	6/22/82	(S)	
D	ECO 12136	W	4/26/82	(S)	
C	CR/O 9834	NJ 1-7-80	1/11/80	(S)	
B	CR/O 9340		7/3/79	(S)	
A1	CR/O - 8996	DULLOA	2/19/79	(S)	
A	MFG. RELEASE	CA	4/21/77	(S)	

DRAWN C. Kelberlau 4/21/77
CHECK T. Watson 4/21/77
APPR. J. Kendrick 4/21/77

123106-000

E

REVISIONS

DO NOT SCALE
THIS DRAWING

SHEET 1 of 1

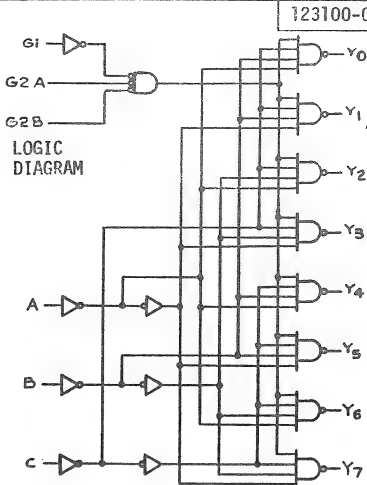
NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123100-001	AMD	AM74LS138PC
123100-001	FAIRCHILD	74LS138PC
123100-001	NATIONAL	DM74LS138N
123100-001	SIGNETICS	N74LS138A
123100-001	TEXAS INST.	SN74LS138N
123100-002	AMD	AM25LS138PC

123100-0XX STANDARD PART

123100-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.



LOGIC
SYMBOL
Vcc= Pin 16
GND= Pin 8

PART NUMBER 123100-XXX(SEE TABULATION)

cipher
GARDEN GROVE DIVISION

I.C., DECODER/DEMULTIPLEXER
3-LINE TO 8-LINE (25/74LS138)

CODE
109

DRAWN C. KELBERLAU 7/3/77
CHECK T. WATSON 7/3/77
APPR J. KENDRICK 7/3/77

123100-000

C

CODE IDENT 52465

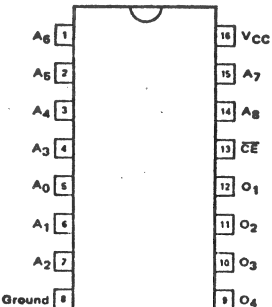
SHEET 1 OF 1

FORM 201 (R 11/80)

NOTES:

1. CASE - 16 Pin Plastic or Ceramic Per Spec Dwg. 124000-002.
2. ELECTRICAL & MECHANICAL - Per Applicable Vendor Data Sheet

VENDOR	VENDOR P/N
Signetics	N82S131N, N82S131F
Harris	HM1-7621-5, HM3-7621-5
Fairchild	93446PC, 93446DC
AMD	AM27S13DC
NATIONAL	DM74S571N



Part No. 123107-001

cipher
data products, inc.

I.C., 2048-BIT BIPOLAR PROGRAMMABLE
ROM (512X4 PROM), WITH
TRI-STATE OUTPUTS

CODE
109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.
C	ECO 12136	W	4/26/82	(S)	
B	CR/O 9834	NJ 1-7-80	1/11/80	(S)	
A1	CR/O - 8996	DULLOA	2/19/79	(S)	
A	MFG. RELEASE	CA	4/21/77	(S)	

DRAWN C. Kelberlau 4/21/77
CHECK T. Watson 4/21/77
APPR J. Kendrick 4/21/77

123107-000

C

REVISIONS

DO NOT SCALE
THIS DRAWING

SHEET 1 of 1

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

NOTES:

1. CASE - 16 Pin Plastic DIP Per Spec Dwg. No. 124000-002

2. ELECTRICAL - Per Applicable Vendor Data Sheet

16

15

14

13

12

11

10

9

VCC

OUT-PUT

0A

0B

0C

0D

ENABLE

T

LOAD

1

2

3

4

5

6

7

8

CLEAR

CLOCK

A

B

C

D

EN-ABLE

GND

DATA INPUTS

P

Part No. 123119-001

I.C., SYNCHRONOUS 4-BIT COUNTER

(74S163)

CODE

109

A

MFG. RELEASE

CHK.

6/9/77

REV.

DESCRIPTION

CHK.

DATE

APPROVED

APPR.

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

DRAWN

C. Kelberlau

6/9/77

CHECK

6/9/77

123119

A

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec Dwg. No. 124000-001

2. ELECTRICAL - Per Applicable Vendor Data Sheet

14

13

12

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4

3

2

1

VCC

0A

0B

0C

0D

ENABLE

T

LOAD

1

2

3

4

5

6

7

8

CLEAR

CLOCK

A

B

C

D

EN-ABLE

GND

DATA INPUTS

P

Part No. 123123-001

I.C., QUAD 2-INPUT AND GATE

WITH OPEN COLLECTOR OUTPUT (74LS09)

CODE

109

A

MFG. RELEASE

CHK.

6/22/77

REV.

DESCRIPTION

CHK.

DATE

APPROVED

APPR.

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

DRAWN

C. Kelberlau

6/22/77

CHECK

6/22/77

123123

A

FORM 495 (12/76)

NOTES:

1. CASE - 16 Pin Plastic DIP Per Spec. Dwg. No. 124000-002

2. ELECTRICAL - Per Applicable Vendor Data Sheet

16

15

14

13

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VCC

6Q

6D

5D

5Q

4D

4Q

CLOCK

1

2

3

4

5

6

7

8

CLEAR

1Q

1D

2Q

2D

3Q

3D

GND

LOGIC / PIN CONFIGURATION

Part No. SEE TABULATION

I.C., HEX D-TYPE FLIP-FLOPS

WITH CLEAR (74S174)

CODE

109

A

MFG. RELEASE

CHK.

6/9/77

REV.

DESCRIPTION

CHK.

DATE

APPROVED

APPR.

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

DRAWN

C. Kelberlau

6/9/77

CHECK

6/9/77

123120-000

C

FORM 495 (12/76)

NOTES:

1. CASE: 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001

2. ELECTRICAL: Per Applicable Vendor Data Sheet.

14

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6

5

4

3

2

1

VCC

0A

0B

0C

0D

ENABLE

T

LOAD

1

2

3

4

5

6

7

8

CLEAR

CLOCK

A

B

C

D

EN-ABLE

GND

DATA INPUTS

P

Part Number 123149-001

I.C., QUAD 2-INPUT POSITIVE

NAND GATE W/OPEN COLL. (74LS01)

CODE

109

A

MFG. RELEASE

CHK.

6/22/77

REV.

DESCRIPTION

CHK.

DATE

APPROVED

APPR.

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

DRAWN

C. Kelberlau

6/22/77

CHECK

6/22/77

123149

A

FORM 201 (R. 8/77)

9b.

123152-000

NOTES

1. CASE: 20 Pin Plastic DIP Per Spec. Dwg. No. 124000-006

2. ELECTRICAL: Per Applicable Vendor Data Sheet

VENDOR

TEXAS INST.

AMD

FAIRCHILD

VENDOR P/N

SN74LS273N

SN74LS273N

74LS273PC

DO NOT SCALE DRAWING

TOLERANCES .XX± ANGULAR .XXX± ±

MODEL

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER DATA PRODUCTS, INC. AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DATE 3/27/78

BY J. K. KENDRICK

44

123152-001

123152-000

B

109

52465

1 OF 1

REV

DESCRIPTION

DATE

APP

BY

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123192

DESCRIPTION

GENERAL: 8-Bit CPU, ROM, RAM, I/O in single package. 2.5µsec and 5.0µsec versions. All instructions 1 or 2 cycles. Over 90 instructions: 70% Single Byte. 1K x 8 ROM/EPROM, 64 x 8 RAM, 27 I/O lines. Interval Timer/Event Counter, Expandable Memory and I/O. Compatible with 8000 series peripherals. Single level interrupt. Single 5V supply.

PACKAGE: 40 PIN Dual in Line.

ELECTRICAL: Per applicable vendor data sheet.

VENDOR

INTEL

VENDOR PART NO.

8035

PIN CONFIGURATION

LOGIC SYMBOL

BLOCK DIAGRAM

8048

8035

123192-001

123192

123192

A

109

52465

1 OF 1

REV

DESCRIPTION

DATE

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123203-000

NOTES

1. CASE- 14 PIN PLASTIC DIP PER SPEC. DWG. 124000-001.

2. ELECTRICAL- PER APPLICABLE VENDER DATA SHEET.

VENDER

TEXAS INST.

FAIRCHILD

SIGNETICS

MOTOROLA

VENDER PART NO.

SN74LS393N

74LS393PC

N74LS393N

SN74LS393N

DO NOT SCALE DRAWING

TOLERANCES .XX± ANGULAR .XXX± ±

MODEL

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER DATA PRODUCTS, INC. AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DATE 9-22-80

BY J. K. KENDRICK

44

123203-001

123203-000

A

109

52465

1 OF 1

REV

DESCRIPTION

DATE

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123231-000

NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.

2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR

RCA MOTOROLA SGS

VENDOR PART NO.

CD4502BE MC14502BCP HCF4502BE

CIRCUIT DIAGRAM

LOGIC DIAGRAM

123231-0XX STANDARD PART

123231-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

TRUTH TABLE

DO NOT SCALE DRAWING

TOLERANCES .XX± ANGULAR .XXX± ±

MODEL

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER DATA PRODUCTS, INC. AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DATE 9-22-80

BY J. K. KENDRICK

44

123231-001

123231-000

A

109

52465

1 OF 1

REV

DESCRIPTION

DATE

APP

BY

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NOTES:
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-002

VENDOR	VENDOR PART NO.
MOTOROLA	SN74LS166N
NATIONAL	DM74LS166N
TEXAS INST.	SN74LS166AN

123232-001 STANDARD PART

123232-101 BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

CONNECTION DIAGRAM

123232-000

54166 (J,W) 74166 (N)
54LS166 (J,W) 74LS166 (N)

Truth Table

Inputs			Internal Outputs		Output
Clear	Shift/Load	Clock	Serial A...H	Parallel QA QH	Output Qn
L	X	X	X	L	L
H	X	L	X	QA0	QH0
H	X	L	X	QA1	QH1
H	X	L	X	QA2	QH2
H	X	L	X	QA3	QH3
H	X	L	X	QA4	QH4
H	X	L	X	QA5	QH5
H	X	L	X	QA6	QH6
H	X	L	X	QA7	QH7

H = High Level (steady state), L = Low Level (steady state)
X = Don't Care (any input, including transitions)
t = Transition from low to high level
a...h = The level of steady-state input at inputs A through H, respectively
QA0, QA1, QA2 = The level of QA, QA1, QA2, respectively, before the indicated steady-state input conditions were established
QA3, QA4 = The level of QA, QA4, respectively, before the most recent t transition of the clock

DSC: R

PART NUMBER 123232-XXX

DO NOT SCALE DRAWING

TOLERANCES
.XX± ANGULAR
.XXX± ±

MODEL

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS DIVISION.

elpher

GARDEN GROVE DIVISION

I.C., 8-BIT PARALLEL IN/SERIAL OUT SHIFT REGISTER (74LS166)

CODE 109

DRAWN R. Baumgartner 2-2-82

CHECK Sam Mathew 2/3/82

APPR Joe Kendrick 3/30/82

123232-000

CODE IDENT 52465

SHEET 1 OF 2

FORM 201 (R 11/80)

LOGIC DIAGRAM

PARALLEL INPUTS

I.C., 8-BIT PARALLEL IN/SERIAL OUT
SHIFT REGISTER (74LS166)

123232-000

SHEET 2 OF 2

FORM 202 (R.8/77)

NOTES:
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-002

VENDOR	VENDOR PART NO.
TEXAS INST.	SN74LS195AN
SIGNETICS	N74LS195N
NATIONAL	DM74LS195N

123233-0XX STANDARD PART

123233-1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

TOP VIEW

123233-000

POSITIVE LOGIC: SEE FUNCTION TABLE

DSC: R

PART NUMBER 123233-XXX

DO NOT SCALE DRAWING

TOLERANCES
.XX± ANGULAR
.XXX± ±

MODEL

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

elpher

data products, inc.

I.C., 4-BIT, PARALLEL ACCESS SHIFT REGISTER

CODE 109

DRAWN D. WILSON JAN2982

CHECK Sam Mathew 2/1/82

APPR Joe Kendrick 2/30/82

123233-000

CODE IDENT 52465

SHEET 1 OF 3

FORM 201 (R 11/80)

FUNCTIONAL BLOCK DIAGRAM

PARALLEL OUTPUTS

I.C., 4-BIT, PARALLEL ACCESS
SHIFT REGISTER

123233-000

SHEET 2 OF 3

FORM 202 (R.8/77)

10b.

INPUTS			OUTPUTS			
CLEAR	SHIFT/LOAD	CLOCK	SERIAL J K	PARALLEL A B C D	Q _A Q _B Q _C Q _D Q _D	
L	X	X	X X	X X X X	L L L L H	
H	L	↑	X X	a b c d	a b c d d	
H	H	L	X X	X X X X	Q _{AO} Q _{BO} Q _{CO} Q _{DO} Q _{DO}	
H	H	↑	L H	X X X X	Q _{AO} Q _{AO} Q _{Bn} Q _{Cn} Q _{Cn}	
H	H	↑	L L	X X X X	L Q _{An}	
H	H	↑	H H	X X X X	H	
H	H	↑	H L	X X X X	Q _{An} Q _{An} Q _{Bn} Q _{Cn} Q _{Cn}	

FUNCTION TABLE

H = high level (steady state)

L = low level (steady state)


X = irrelevant (any input, including transitions)

↑ = transition from low to high level.

a,b,c,d, = the level of steady state input at A,B,C,or D, respectively.

Q_{AO},Q_{BO}, Q_{CO}, Q_{DO}= the level of Q_A,Q_B,Q_C,or Q_D,respectively, before the indicated steady state input conditions were established.

Q_{An},Q_{Bn},Q_{Cn} = the level of Q_A,Q_B, or Q_C, respectively, before the most recent transition of the clock.

I.C., 4-BIT PARALLEL ACCESS SHIFT REGISTER		A
123233-000	SHEET 3 OF 3	

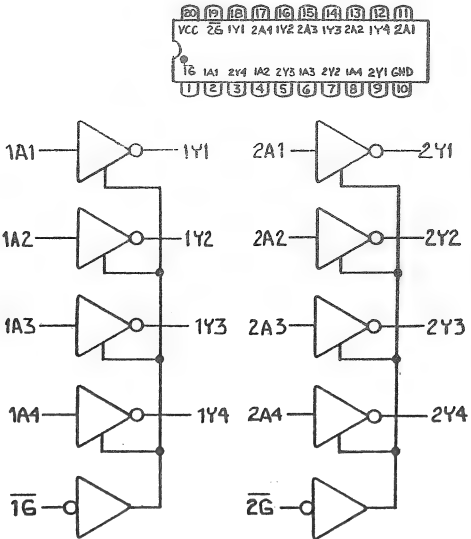
FORM 202 (R.8/77)

- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
 - PACKAGE: 20 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-005

VENDOR	VENDOR PART NO.
AMD	SN74S240N
FAIRCHILD	74S240PC
NATIONAL	DM74S240N
T.I.	SN74S240N

123234 -0XX STANDARD PART

123234 -1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

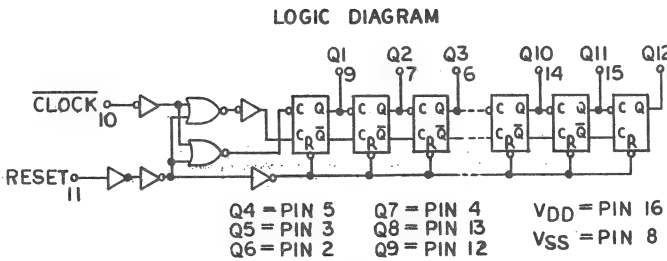


REV		DESCRIPTION		DATE		DO NOT SCALE DRAWING		TOLERANCES		MODEL		NEXT ASSY		DRAWN		CHECK		APPR		PART NUMBER		CODE	
A		PROD. REL.		ERO 820299		DO NOT SCALE DRAWING		TOLERANCES		MODEL		NEXT ASSY		DRAWN		CHECK		APPR		123234-XXX		I.C., OCTAL BUFFER/LINE DRIVER, TRI-STATE OUTPUTS (74S240)	
																						109	
																						A	

FORM 201 (R 11/80)

- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
 - PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-002

VENDOR	VENDOR PART NO.
MOTOROLA	MC14040BCP
NATIONAL	CD4040CN
SGS	HCF4040BE



123235-0XX STANDARD PART

123235-1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

REV		DESCRIPTION		DATE		DO NOT SCALE DRAWING		TOLERANCES		MODEL		NEXT ASSY		DRAWN		CHECK		APPR		PART NUMBER		CODE	
A		PROD. REL.		ERO 820299		DO NOT SCALE DRAWING		TOLERANCES		MODEL		NEXT ASSY		DRAWN		CHECK		APPR		123235-XXX		I.C., 12-STAGE RIPPLE-CARRY BINARY COUNTER/ DIVIDER (4040)CMOS	
																						109	
																						B	

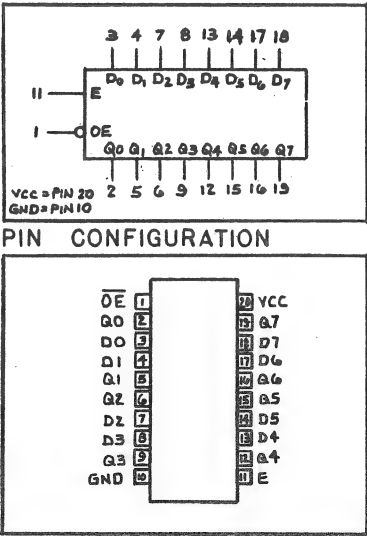
FORM 201 (R 11/80)

- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
 - PACKAGE: 20 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-005

VENDOR	VENDOR PART NO.
NATIONAL	DM74LS373N
AMD	SN74LS373N
T.I.	SN74LS373N
SIGNETICS	N74LS373N
FAIRCHILD	74LS373PC
MOTOROLA	SN74LS373N

123237-0XX STANDARD PART

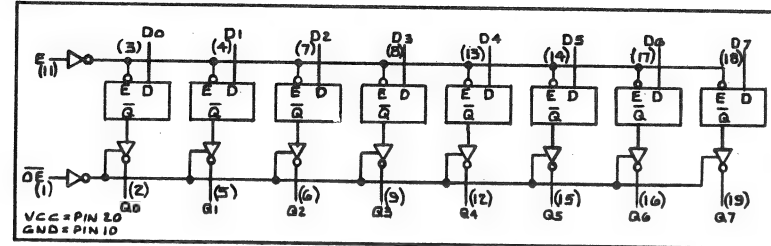
123237-1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.



REV		DESCRIPTION		DATE		DO NOT SCALE DRAWING		TOLERANCES		MODEL		NEXT ASSY		DRAWN		CHECK		APPR		PART NUMBER		CODE	
A		PROD. REL.		ERO 820299		DO NOT SCALE DRAWING		TOLERANCES		MODEL		NEXT ASSY		DRAWN		CHECK		APPR		123237-XXX		I.C., OCTAL TRANSPARENT LATCH W/3-STATE OUTPUTS (74LS373)	
																						109	
																						B	

FORM 201 (R 11/80)

LOGIC DIAGRAM



I.C., OCTAL TRANSPARENT LATCH W/3 -
STATE OUTPUTS (74LS373)



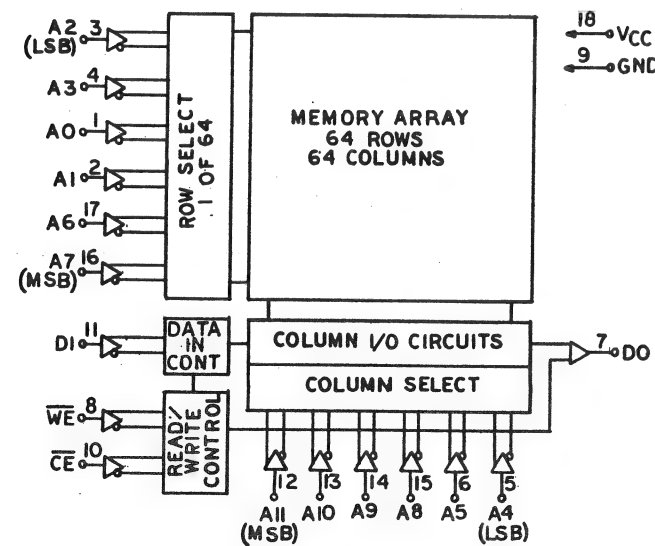
B

123237-000

SHEET 2 OF 2

FORM 202 (R.8/77)

BLOCK DIAGRAM



I.C., 4096 X 1 STATIC R/W
RANDOM ACCESS MEMORY (91L24)



B

123238-000

SHEET 2 OF 2

NOTES:

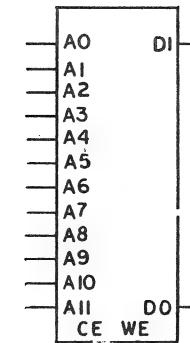
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
2. PACKAGE: 18 PIN DIP CIPHER DATA PRODUCTS SPEC,
DWG NO. 124000 - 006

VENDOR	VENDOR PART NO.
AMD	AM21L41-25PC, AM21L41-25DC
NATIONAL	MM5257N-25
INTEL	P2141-5

123238 -0XX STANDARD PART

123238 -1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

CE	WE	DI	DO/OUT	MODE
H	X	X	Hi-Z	NOT SELECTED
L	L	H	Hi-Z	WRITE 1
L	L	L	Hi-Z	WRITE 0
L	H	X	DO/OUT	READ



LOGIC SYMBOL

DSC: R

PART NUMBER 123238-XXX

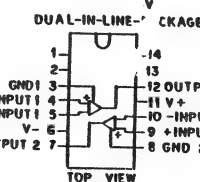
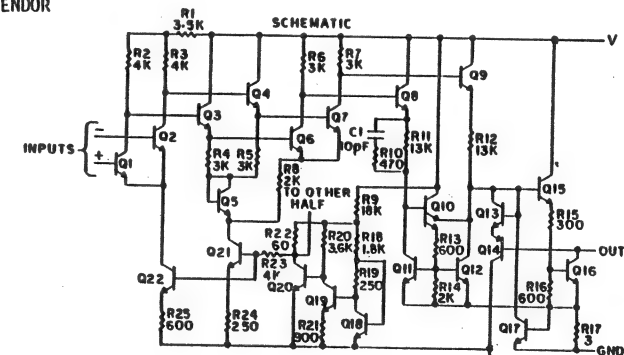
REV	DESCRIPTION	APPROVAL	DATE	DO NOT SCALE DRAWING	TOLERANCES: .XX± .XXX±	ANGULAR ±		I.C., 4096 X 1 STATIC R/W RANDOM ACCESS MEMORY (21L41)	CODE 109
A	PROD. REL. ERO 820229			MODEL: NEXT ASSY:					
				THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.					
				DRAWN	T.LINDMAN	2-1-82	123238-000		
				CHECK	Kam Mahdavi	2/1/82			
				APPR	Joe Kendrick	3/24/82			
							CODE IDENT	52465	SHEET 1 OF 2

FORM 201 (R 11/80)

NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR
DATA SHEET
2. PACKAGE: 14 PIN DIP PER CIPHER DATA PRODUCTS
SPEC. DWG. NO. 124000-001

VENDOR	VENDOR PART NO.
AMD	LM319N
NATIONAL	LM319N
SIGNEICS	LM319N



DSC: R

PART NUMBER: 123239-001

REV	DESCRIPTION	APPROVAL	DATE	DO NOT SCALE DRAWING	TOLERANCES: .XX± .XXX±	ANGULAR ±		I.C., HIGH SPEED DUAL COMPARATOR (LM319)	CODE 109
A	PROD. REL. ERO 820323			MODEL: NEXT ASSY:					
				THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.					
				DRAWN	H. Stewart	5/2/82	123239-000		
				CHECK	Kam Mahdavi	3/3/82			
				APPR	Joe Kendrick	3/10/82			
							CODE IDENT		SHT. 1 of 1

123240-000

NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET

2. PACKAGE: 40 PIN DIP

VENDOR: INTEL, NEC
VENDOR PART NO.: D8748, D8748D

PIN CONFIGURATION

DSC: R PART NUMBER: 123240-001

DO NOT SCALE DRAWING

TOLERANCES: .XX± ANGULAR .XXX± ±

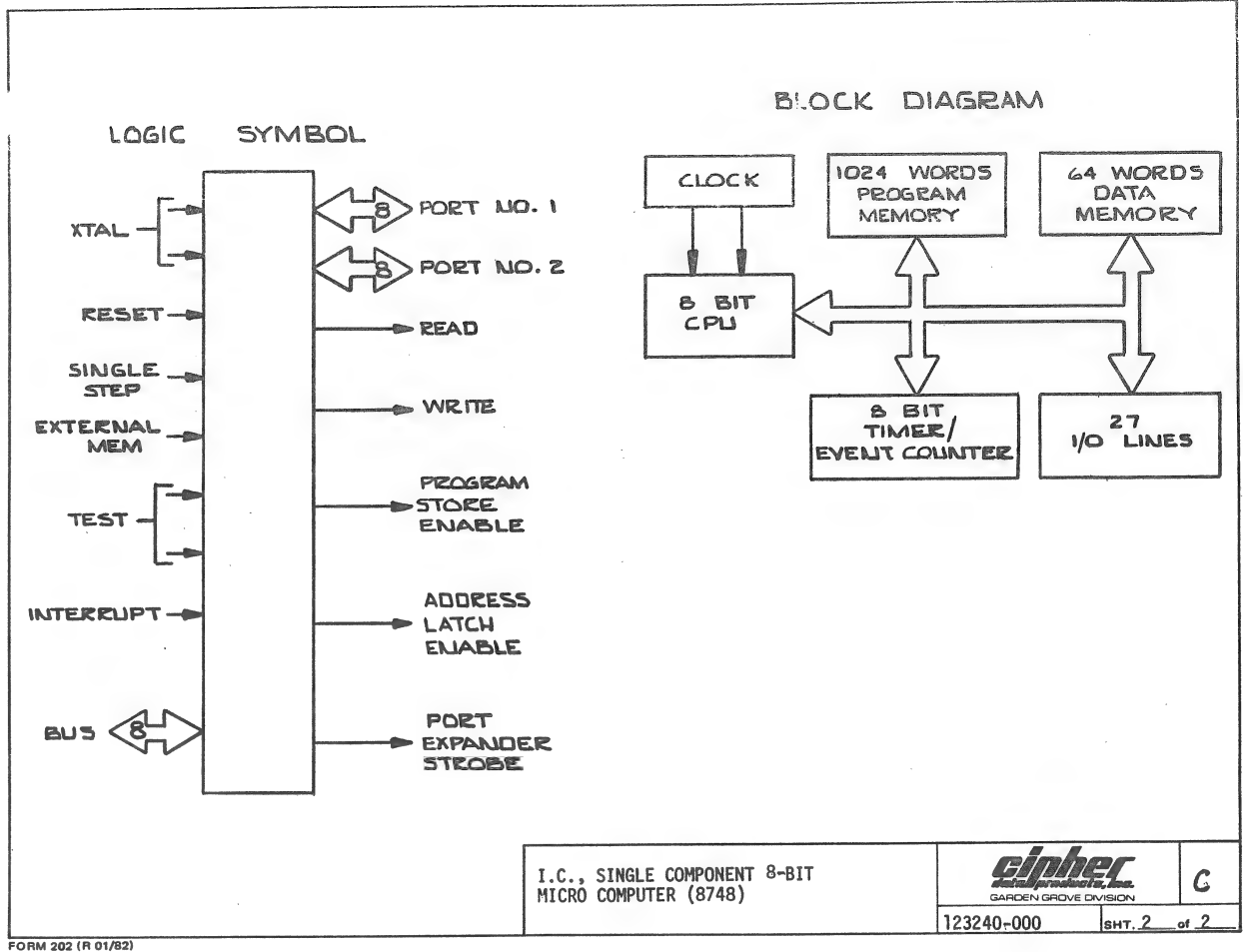
MODEL: I.C., SINGLE COMPONENT 8-BIT MICRO COMPUTER (8748) CODE 109

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN: MATTHES 3/1/82
CHECK: Sam Maklou 3/2/82
APPR: Jess Kendrick 4/22/82

123240-000 C

FORM 201 (R 01/82)



125006-000

NOTES:

1. CASE TYPE: TO-220

2. ELECTRICAL: Per Applicable Vendor Data Sheets.

INPUT GROUND OUTPUT

.950 MIN, .139 DIA, .147 DIA, .045, .025 (TOP VIEW)

COP PART NO.

OUTPUT VOLTAGE

FAIRCHILD PART NO.

MOTOROLA PART NO.

TEXAS INSTRUMENT PART NO.

NATIONAL PART NO.

SIGNETICS PART NO.

125006-005, -006, -008, -012, -015, -018

5, 6, 8, 12, 15, 18

JJA 7805UC, JJA 7806UC, JJA 7808UC, JJA 7812UC, JJA 7815UC, JJA 7818UC

MC 7805CT, MC 7806CT, MC 7808CT, MC 7812CT, MC 7815CT, MC 7818CT

JJA7805CKC, JJA7806CKC, JJA7808CKC, JJA7812CKC, JJA7815CKC, JJA7818CKC

LM7805CT, LM7806CT, LM7808CT, LM7812CT, LM7815CT, LM7818CT

JJA7805CU, JJA7806CU, JJA7808CU, JJA7812CU, JJA7815CU, JJA7818CU

PART NUMBER 125006-XXX SEE TABULATION

DO NOT SCALE DRAWING

TOLERANCES: .XX± ANGULAR .XXX± ±

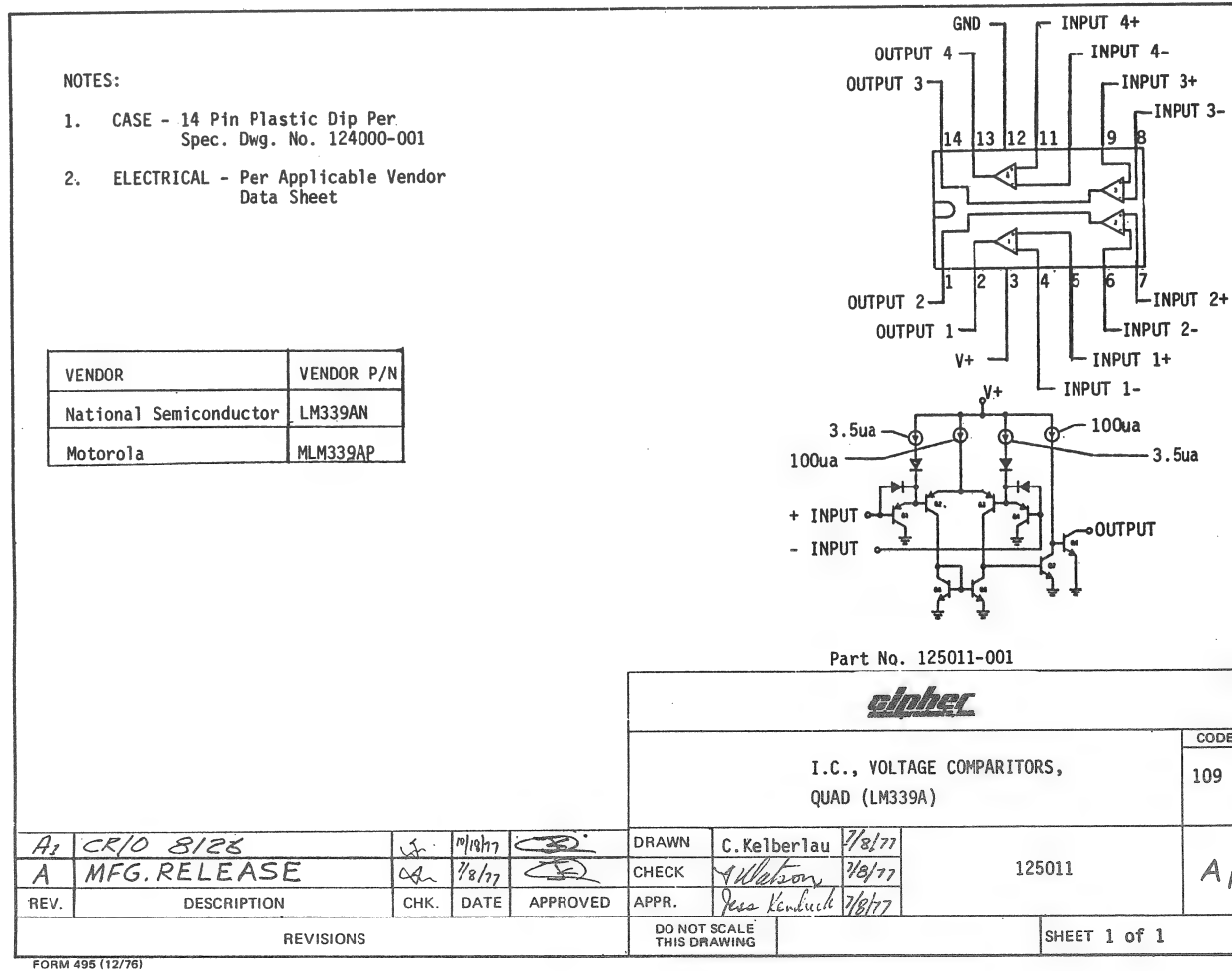
MODEL: I.C., POSITIVE 3 TERMINAL REGULATOR (TO-220 TYPE CASE, 7800 SERIES) CODE 109

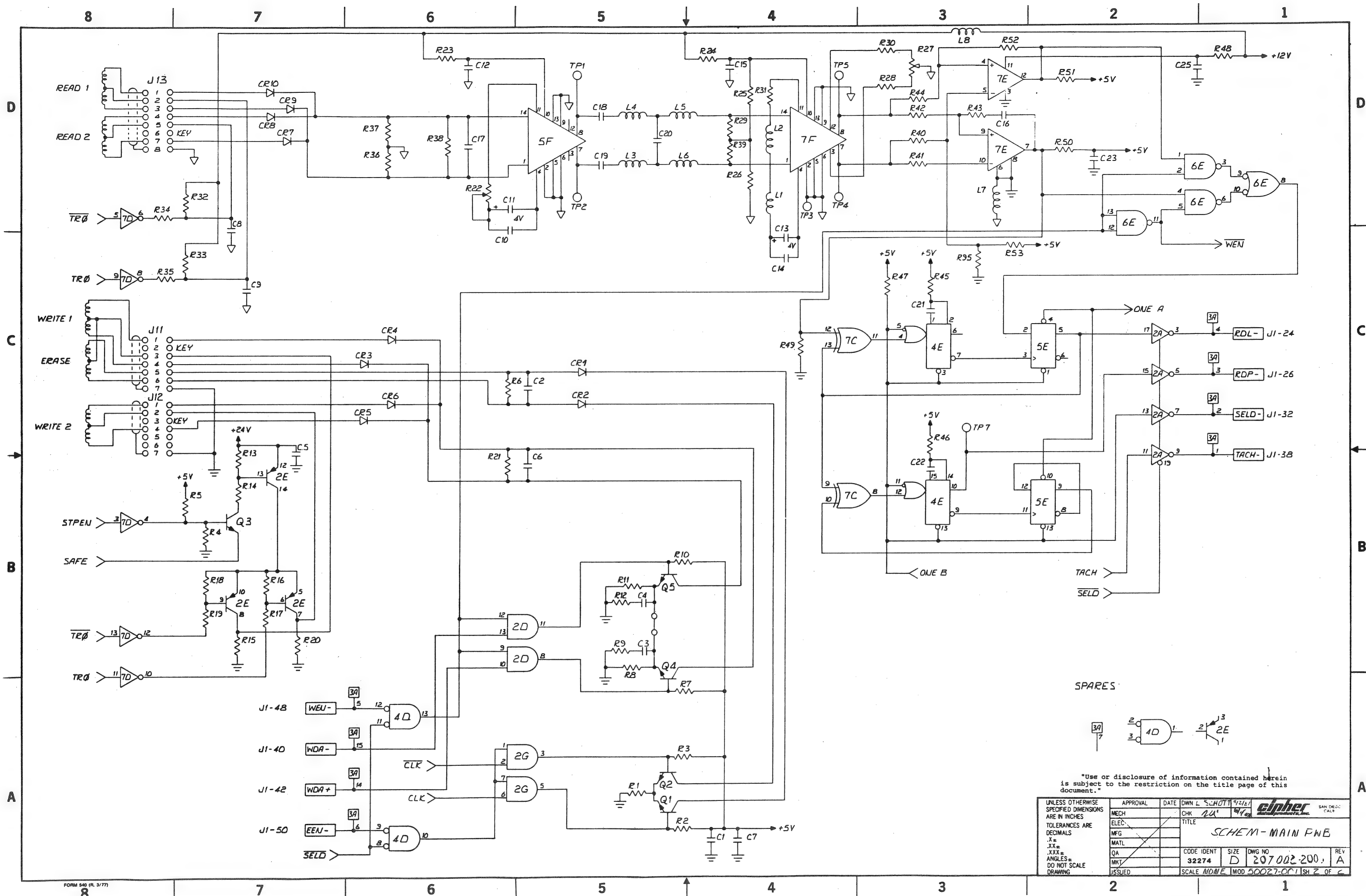
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN: L. HALE 5/22/78
CHECK: V. WATSON 5/22/78
APPR: J. KENDRICK 5/22/78


125006-000 D

FORM 201 (R 1/78)





UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE DECIMALS .XX* .XXX* ANGLES* DO NOT SCALE DRAWING

APPROVAL	DATE	DWN L SCHOTT 9/2/61		
MECH	CHK	DA 9/4/61		
ELEC	TITLE			
MFG				
MATL				
QA	CODE IDENT	SIZE	DWG NO	REV
MKT	32274	D	207002-200	A
ISSUED	SCALE	NONE	MOD 50027-001 SH 2 OF 6	

SCHEM-MAIN PWB

8

7

6

5

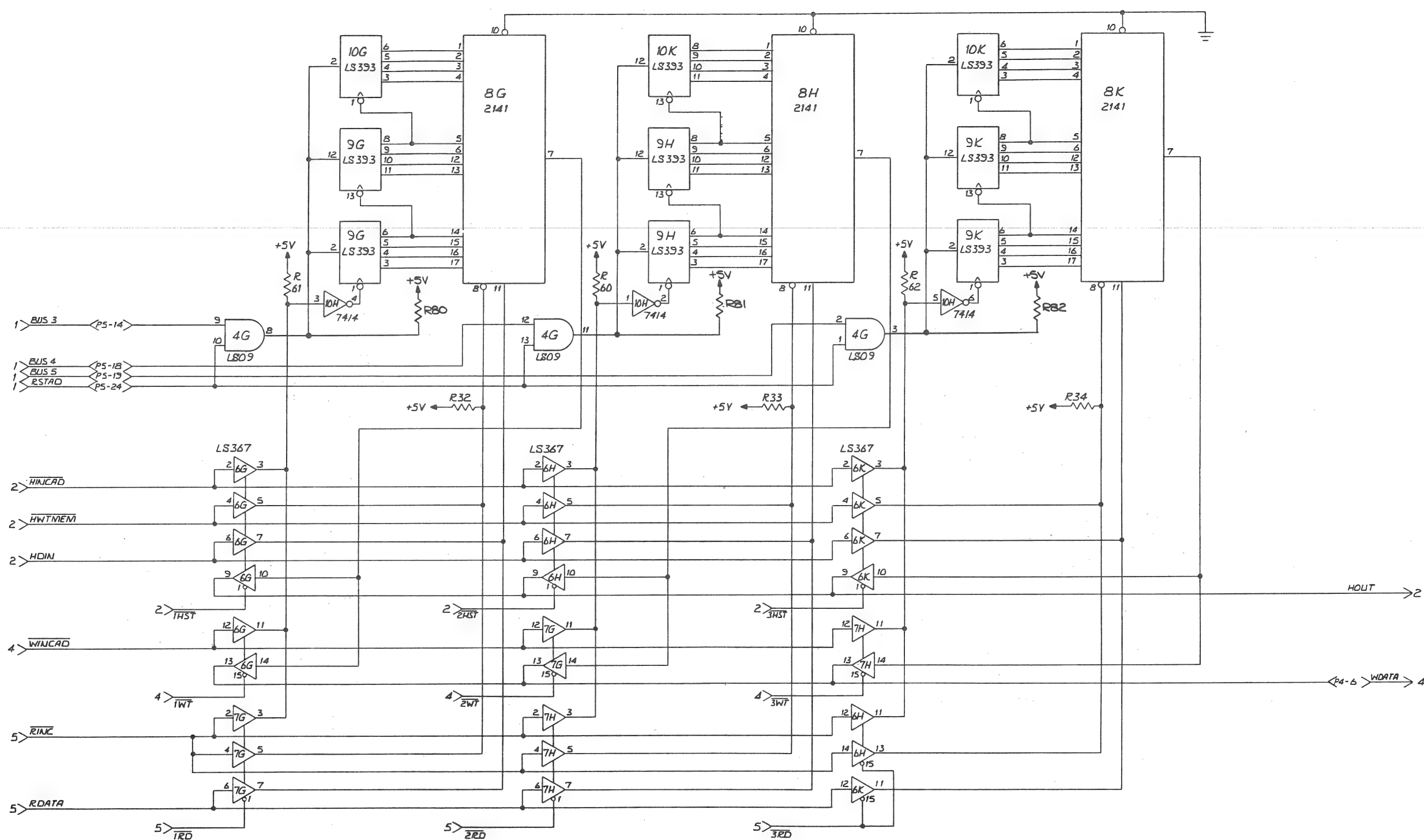
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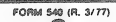
3

2

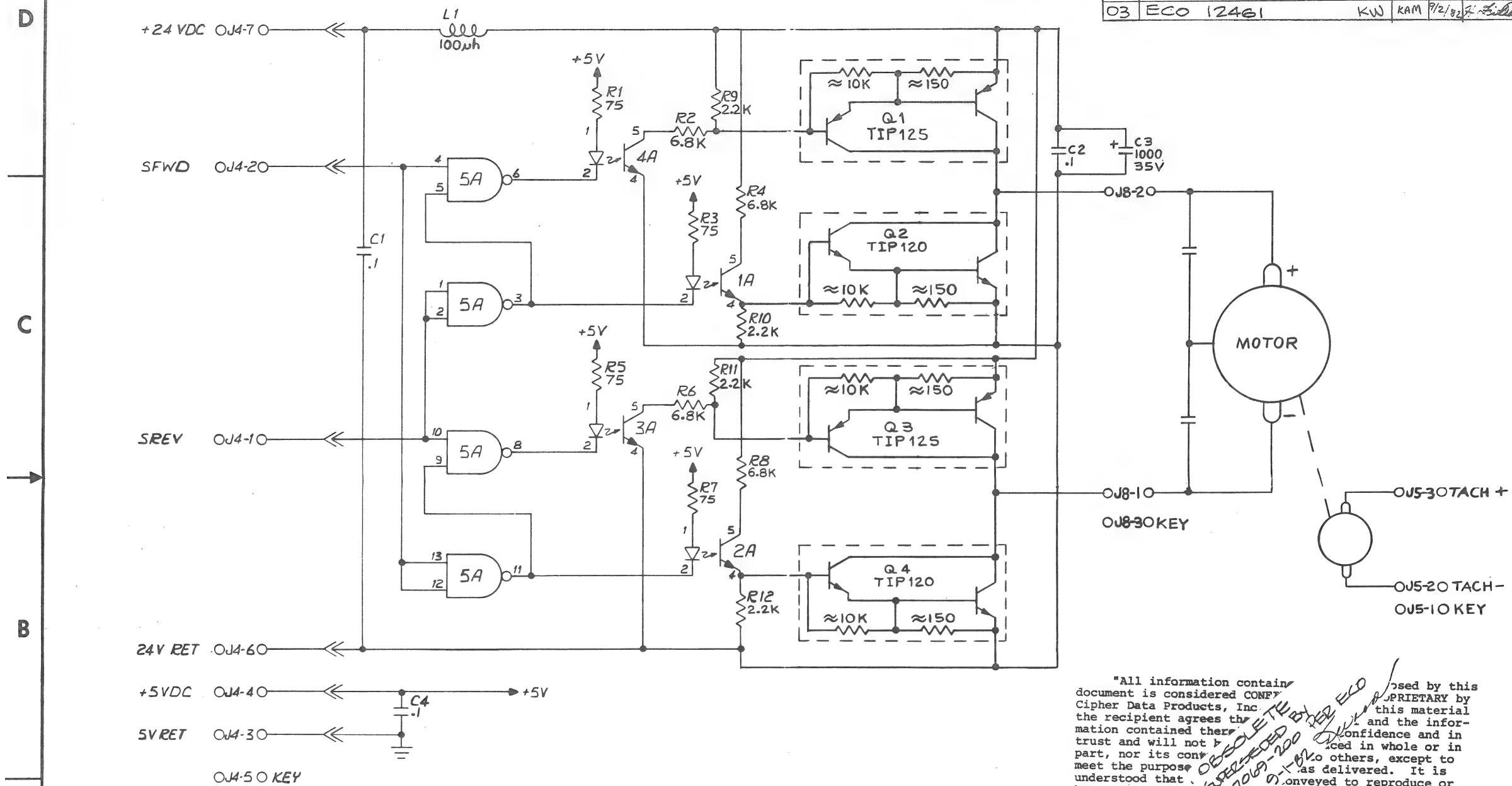
1

BUFFER MEMORIES





REVISIONS					207017-200	13
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
A	ENG REL	8-29-81	W	19/1/81	11/13/81	
01	PIL REL ECO 820309	KAM	3/5/82			
02	ECO 12179	HS	KAM	4/27/82	9/2/82	
03	ECO 12461	KW	KAM	7/2/82	7/2/82	



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D & D MGR	11/11/81
ME MGR	11/12/81
DOC MGR	11/12/81
UL/CSA	11/11/81

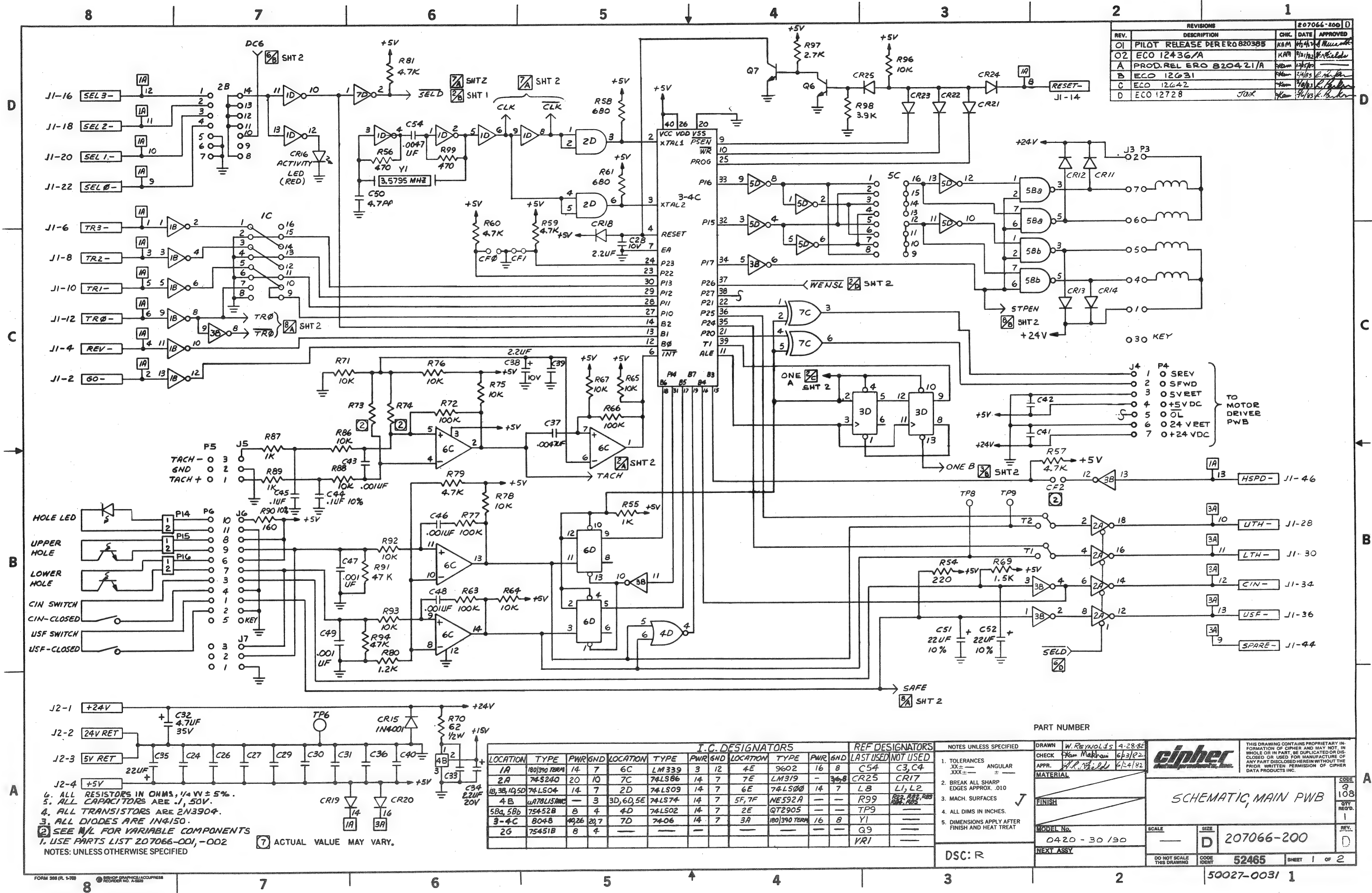
HISTORICAL RECORD
DO NOT DESTROY

DSC: 7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVAL	DATE	DWN L. SCHOTT 8/1/81	CHK	7/1/81	TITLE	SCHEM-MOTOR DRIVER, PWB	CODE IDENT	SIZE	DWG NO	REV
TOLERANCES ARE DECIMALS	MECH	11/12/81									
.XX ±	ELEC	11/12/81									
.XXX ±	MFG	11/12/81									
ANGLES ±	MATL	11/12/81									
DO NOT SCALE DRAWING	QA	11/12/81									
	MKT	11/12/81									
	ISSUED	11/12/81									

IC DESIGNATORS				REF DESIGNATORS	
LOCATION	TYPE	PWR	GRID	LAST USED	NOT USED
1A, 2A, 3A, 4A	4N28	-	-	C4	
5A	743B	14	7	L2	
				R12	
				Q4	

2. ALL CAPACITORS IN MICROFARADS.
1. ALL RESISTORS IN OHMS, 1/4W, 5%
NOTES: UNLESS OTHERWISE SPECIFIED



REVISIONS			
REV.	DESCRIPTION	CHK.	DATE
01	PILOT RELEASE DERERO 820385	KAM	4/24/82
02	ECO 12436/A	KAM	4/24/82
A	PROD. REL ERO 820421/A	KAM	4/24/82
B	ECO 12631	KAM	4/24/82
C	ECO 12642	KAM	4/24/82
D	ECO 12728	KAM	4/24/82

I.C. DESIGNATORS											
LOCATION	TYPE	PWR	GND	LOCATION	TYPE	PWR	GND	LOCATION	TYPE	PWR	GND
1A	1801390 TERN	14	7	6C	LM339	3	12	4E	9602	16	8
2A	74LS240	20	10	7C	74LS86	14	7	7E	LM319	14	7
1B, 3B, 1Q, 5D	74LS04	14	7	2D	74LS09	14	7	6E	74LS00	14	7
4B	7470LS154MC	—	3	3D, 6D, 5E	74LS74	14	7	5F, 7F	NE592A	—	—
5B, 5Bb	75452B	8	4	4D	74LS02	14	7	2E	QT2905	—	—
3-4C	8048	20	7	7D	7406	14	7	3A	1801390 TERN	16	8
2G	75451B	8	4	—	—	—	—	—	—	—	—

REF DESIGNATORS			
LAST USED	NOT USED	LAST USED	NOT USED
C54	C3, C4	CR25	CR17
CR25	CR17	R99	Y1
TP9	—	Q9	—
VR1	—	—	—

DRAWN: W. Reynolds		4-28-82	
CHECK: KAM		6/3/82	
APPR: KAM		6/24/82	
MATERIAL:			
FINISH:			
MODEL No. 0420 - 30 / 90			
NEXT ASSY:			
DSC: R			
SCALE: D			
SIZE: 207066-200			
DO NOT SCALE THIS DRAWING			
CODE IDENT: 52465			
SHEET 1 OF 2			

6. ALL RESISTORS IN OHMS, 1/4 W ± 5%.

5. ALL CAPACITORS ARE .1, 50V.

4. ALL TRANSISTORS ARE 2N3904.

3. ALL DIODES ARE 1N4150.

2. SEE M/L FOR VARIABLE COMPONENTS

1. USE PARTS LIST 207066-001, -002

NOTES: UNLESS OTHERWISE SPECIFIED

7. ACTUAL VALUE MAY VARY.

8

7

6

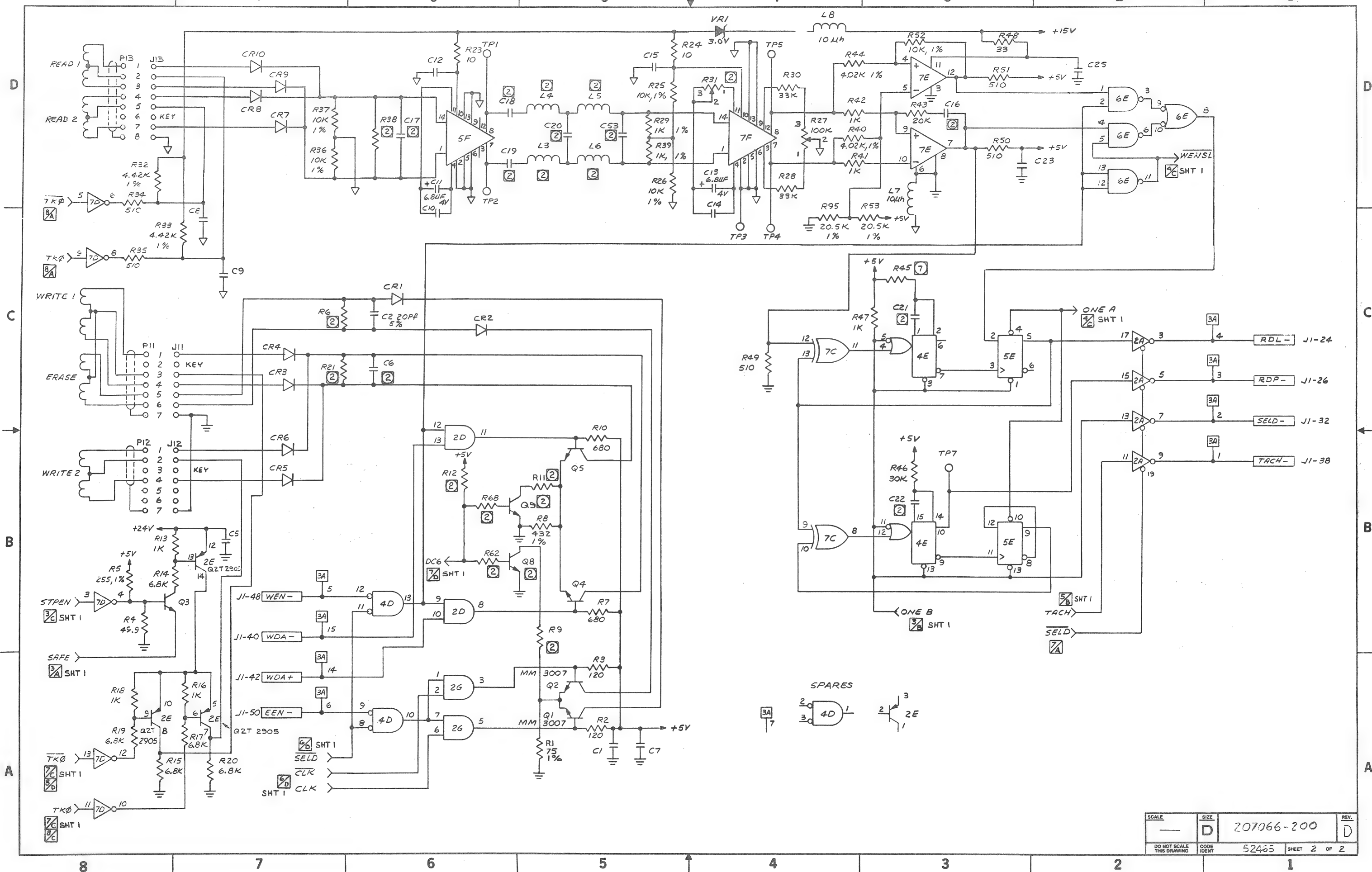
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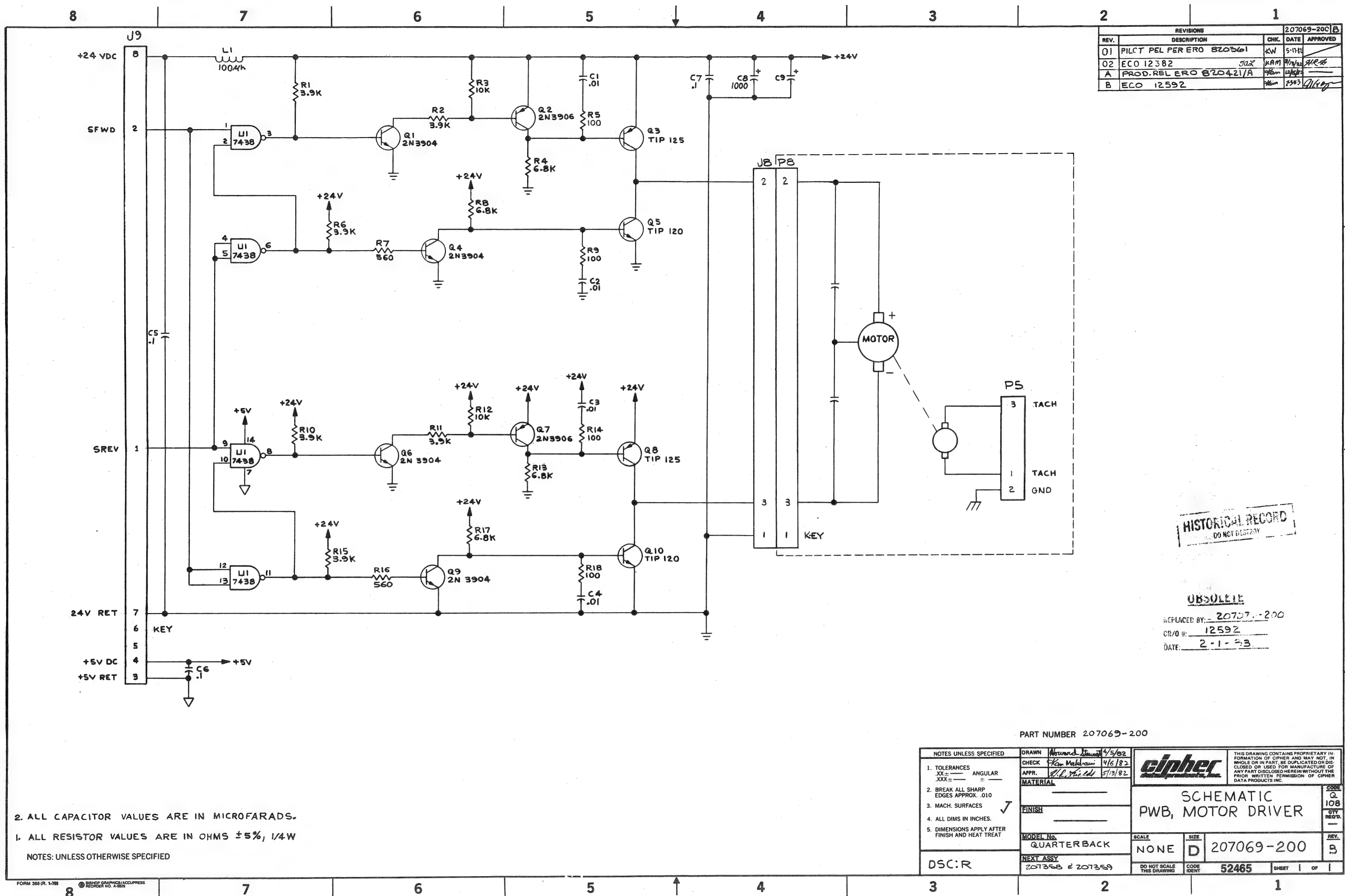
4

3

2

1







SECTION 2

ASSEMBLY DRAWINGS

2.1 INTRODUCTION

This section contains the assembly drawings and material lists for all the assemblies in the Quarterback Tape Drive. These documents are listed in paragraph 2.2. Logic schematics are provided in Section I of this Engineering Drawing Package.

The assembly drawings identify every part on any given assembly. Parts are identified either by item number; (e.g., 1, 2, 3, etc.) or by circuit reference number (e.g., R1, C1, U1, etc.). The associated material lists incorporate these identification numbers, together with part description, Cipher part number, and part quantity, i.e., the quantity of a particular part required for a given assembly.

2.2 ASSEMBLY DRAWINGS

The following assembly drawings are provided in numerical sequence, as listed. Included are related material lists.

	Dwg. No.
Assembly, Main PWB . . . . .	.207002-100
Assembly, Controller . . . . .	.207005-100
Assembly, Microcomputer Expander PWB . . . . .	.207011-100
Assembly, Motor Driver PWB . . . . .	.207017-100
Assembly, Main PWB . . . . .	.207066-100
Assembly, Motor Driver PWB . . . . .	.207069-100
Assembly, Diode/Slow Speed Motor Kit 30 lps . . . . .	.207072-100
Assembly, Cable-Motor Driver PWB . . . . .	.207073-100
Assembly, Motor Driver PWB . . . . .	.207076-100
Outline Drawing, Basic Cartridge Tape Drive . . . . .	.207302-001
Outline Drawing, Intelligent Cartridge Tape Drive . . . . .	.207303-001
Assembly, Main Frame . . . . .	.207304-100
Assembly, Drive Motor . . . . .	.207314-100
Assembly, Sensor . . . . .	.207324-100
Assembly, Sensor Harness . . . . .	.207326-100
Assembly, Carriage . . . . .	.207329-100
Pictorial, MTT F420 . . . . .	.207350-100
Pictorial, MTT 0420 . . . . .	.207358-100
Assembly, Main Frame . . . . .	.207393-100
Assembly, Ground Strap Cable . . . . .	.207394-100

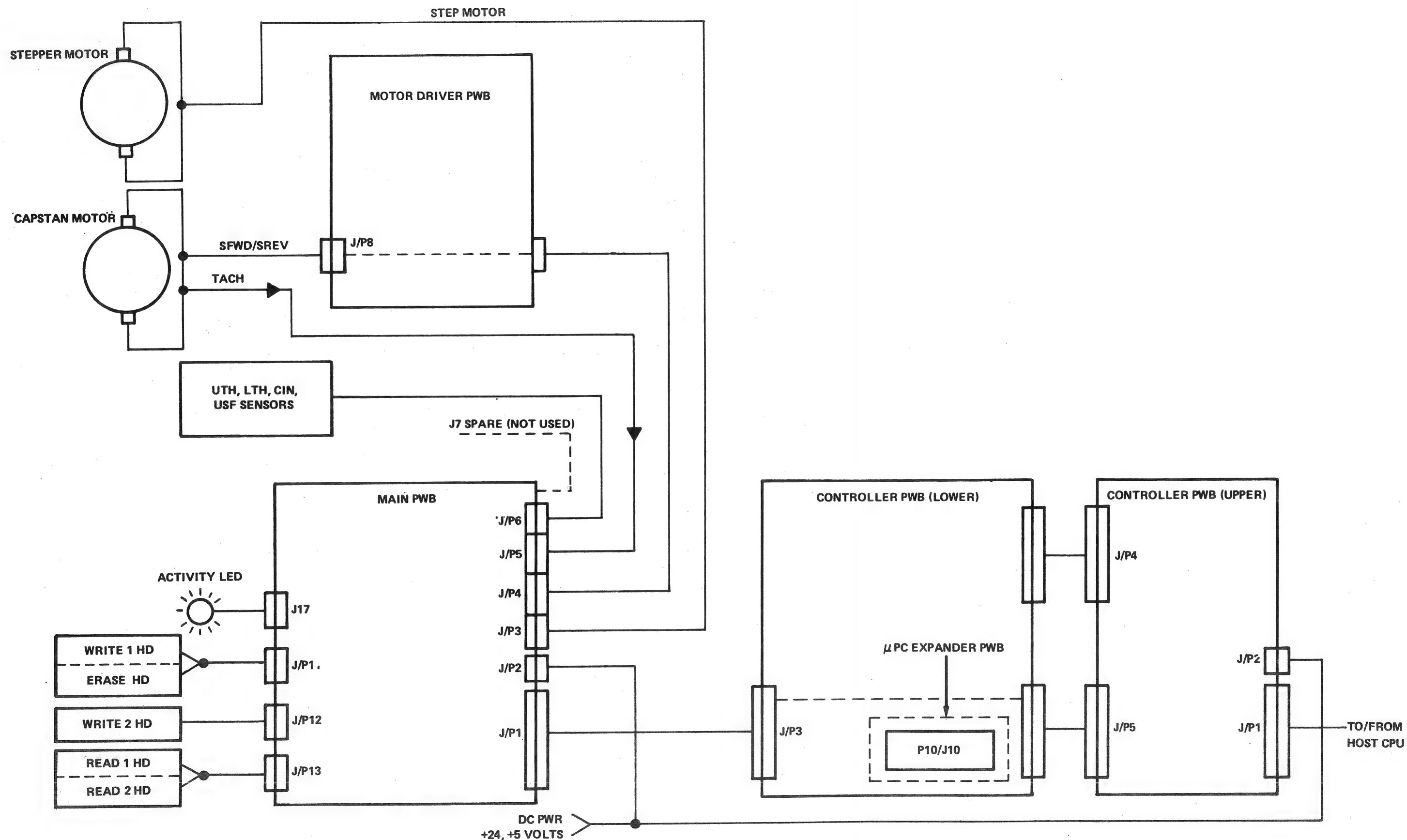
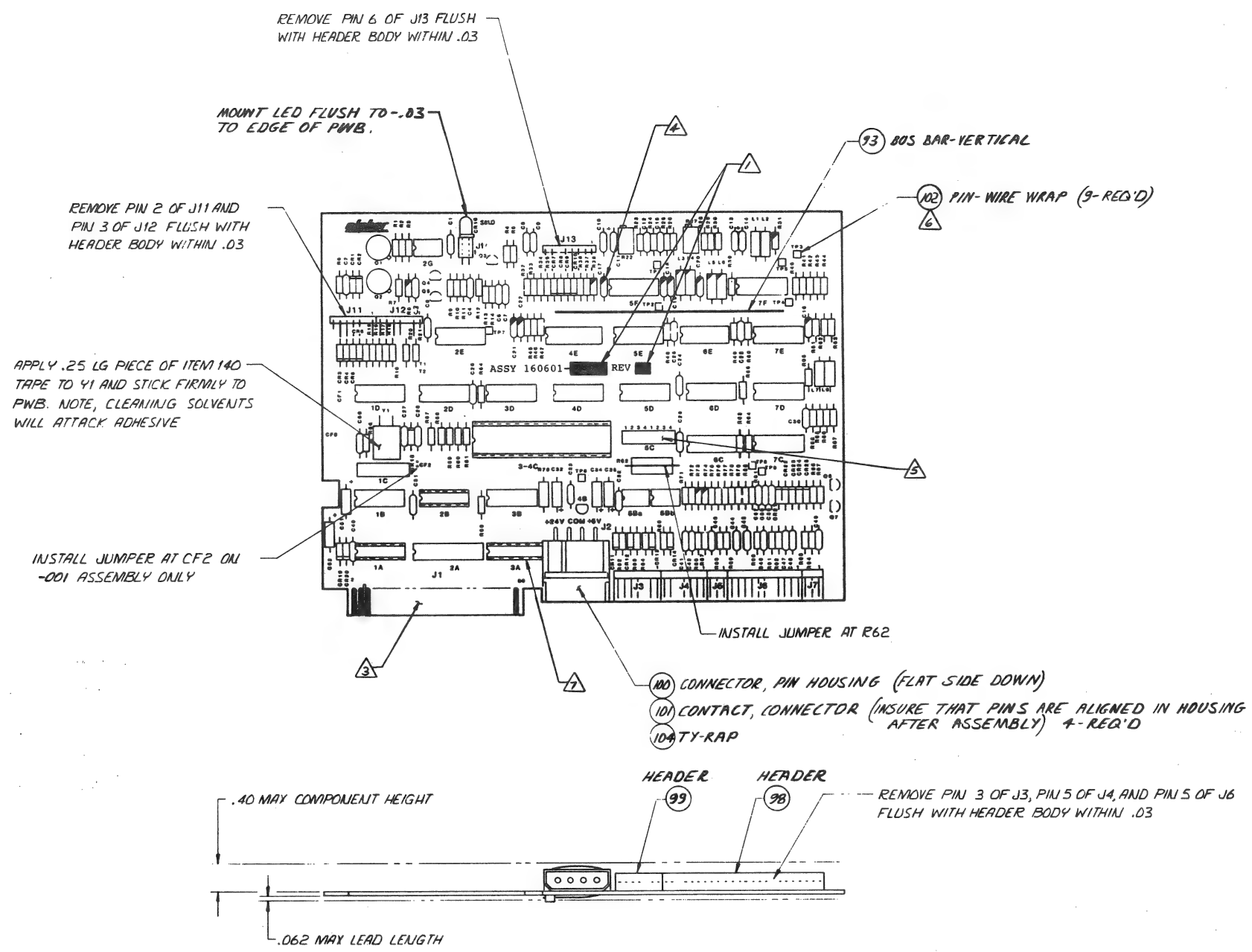


FIGURE 2-1. QUARTERBACK INTELLIGENT TAPE DRIVE, INTERCONNECT DIAGRAM

REVISIONS					201002-100
REV	DESCRIPTION	CHK	DATE	APPROVED	
A	ENG REL	LVS	11/1/81	CK	11/1/81
O1	PIL REL ERO 820309	KAM	3/5/82		
O2	ECO 12315	KAM	11/1/81		
A	PROD. REL ERO 820421/A	KAM	12/1/81		



- 1. INSTALL COMPONENTS 1A, 3A, 2B, AND 3-4C IN SOCKETS AFTER FLOW SOLDERING AND CLEANING
- 2. PRESS TEST POINT PINS INTO PWB PRIOR TO FLOW SOLDERING
- 3. INSTALL ITEM 103 JUMPER CLIPS ON PIN SETS 1 OF HEADER 5C
- 4. COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSY VERSION
- 5. MASK CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- 6. FOR SCHEMATIC REFER TO DWG 207002-200
- 7. MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 IN. HIGH WHITE CHARACTERS PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NO. SEE SEPARATE M/L

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D & D MGR		11/1/81	
ME MGR		11/1/81	
DOC MGR		11/1/81	
UL/CSA		11/1/81	

DSC: R

APPROVAL	DATE	OWN	L. SCHOTT	9/2/81
MECH	11/2/81	CHK	2/8	11/2/81
ELEC	11/1/81	TITLE	ASSY, PWB-MAIN	
MFG	11/1/81	CODE IDENT	SIZE	DWG NO
QA	11/1/81	32274	D	207002-100
MKT	11/1/81	SCALE 1:1	MOD 50030-001	REV A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE DECIMALS .XX .XXX ANGLES DO NOT SCALE DRAWING

ISSUED 11/1/81



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

ASSY, PWB - MAIN - 30 IPS DSC:R Q 120

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
207002 - 200	1	SCHEMATIC		0	
207001 - 001	2	PROCESS BOARD		1	
123234 - 001	3	I.C. 74S240	2A	1	
123031 - 001	4	I.C. 74LS04	1B, 3B, 1D, 5D	4	
125017 - 012	5	I.C. MA78L12	4B	1	
101031 - 001	6	I.C. 75452	5Ba, 5Bb	2	
125011 - 001	7	I.C. LM339	6C	1	
123038 - 001	8	I.C. 74LS86	7C	1	
123123 - 001	9	I.C. 74LS09	2D	1	
123030 - 001	10	I.C. 74LS02	4D	1	
123036 - 001	11	I.C. 74LS74	3D, 6D, 5E	3	
100331 - 001	12	I.C. 7406	7D	1	
101139 - 001	13	I.C. 75451	2G	1	
100234 - 001	14	I.C. 9602	4E	1	

PREPARED BY Sue Redmond DATE 1-14-82 04/12494
CHECKED BY 03/12435
DESIGN ENGINEER 02/12185
DWG REL NO. 820287 DATE 2/1/82
REV ECO DATE / SIGNATURE
REV ECO DATE / SIGNATURE
MODEL NO. 207359
0420-30



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
100155 - 385	57	RESISTOR, 1/4w +1% 10K	R25, 26, 36, 37, 52	5	
100155 - 289	58	RESISTOR, 1/4w +1% 1K	R29, 39	2	
100155 - 254	59	RESISTOR, 1/4w +1% 432	R8, 31	2	
-	60				
100155 - 347	61	RESISTOR, 1/4w +1% 4.02K	R40, 44	2	
100155 - 415	62	RESISTOR, 1/4w +1% 20.5K	R53, 95	2	
142027 - 003	63	TERMINATOR - 14 PIN 220/330 OHM	1A	1	
142032 - 001	64	TERMINATOR - 16 PIN 220/330 OHM	3A	1	
138002 - 104	65	POTENTIOMETER 1/4w, 100K	R27	1	
102769 - 475	66	CAP., TANT. 35v +20% 4.7uf	C32	1	
102768 - 226	67	CAP., TANT. 10v +20% 22uf	C35, 51, 52	3	
102768 - 225	68	CAP., TANT. 10v +20% 2.2uf	C28, 38	2	
102871 - 225	69	CAP., TANT. 20v +20% 2.2uf	C34	1	
102870 - 685	70	CAP., TANT. 4v +20% 6.8uf	C11, 13	2	
102665 - 104	71	CAP., CER. 50v -20+80% .1 uf	C1, 5, 7-10, 12, 14, 15, 23-27, 29-31, 33, 36, C39-42	23	
-					
102667 - 104	72	CAP., CER. 50v +10% .1 uf	C44, 45	2	
102667 - 102	73	CAP., CER. 50v +10% .001 uf	C43, 46-49	5	
102667 - 472	74	CAP., CER. 50v +10% .0047uf	C37	1	
102666 - 479	75	CAP., CER. 50v +5% 4.7pf	C50	1	
-	76				



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
123239 - 001	15	I.C. LM319	7E	1	
101032 - 001	16	I.C. NE592	5F, 7F	2	
207030 - 001	17	ASSY, PROM 8 BIT MICROCOMPUTER	3-4C	1	
123029 - 001	18	I.C. 74LS00FCQR	6E	1	
146014 - 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2	
146014 - 040	20	SOCKET, DIP - 40 CONTACTS	3-4C	1	
146014 - 016	21	SOCKET, DIP - 16 CONTACTS	3A	1	
120909 - 003	22	HEADER, PROGRAM-DIP	2B	1	
151032 - 001	23	TRANSISTOR PNP Q2T2905	2E	1	
151030 - 001	24	TRANSISTOR NPN 2N3904	Q3-7	5	
151033 - 001	25	TRANSISTOR NPN MM3007	Q1, 2	2	
107201 - 001	26	DIODE 1N4150	CR1-14, CR18-25	22	
107005 - 001	27	LED, INDICATOR MV5054-2	CR16	1	
106500 - 014	28	CRYSTAL - 3.579545 MHZ	Y1	1	
100064 - 121	29	RESISTOR, 1/4w +5% 120	R70	1	
101156 - 472	30	RESISTOR, 1/4w +5% 4.7K	57, 59, 60, 79, 81	5	
101156 - 471	31	RESISTOR, 1/4w +5% 470	56	1	
101156 - 681	32	RESISTOR, 1/4w +5% 680	R7, 10, 58, 61	4	
101156 - 103	33	RESISTOR, 1/4w +5% 10K	64, 65, 67, 71, 75, 76, 78, 86, 88, 92, 93, 96	12	
101156 - 333	34	RESISTOR, 1/4w +5% 33K	28, 30	2	
101156 - 104	35	RESISTOR, 1/4w +5% 100K	R63, 66, 72, 77	4	



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
-	77				
-	78				
-	79				
102669 - 330	80	CAP., CER. 50v +5% 33pf	C16	1	
102669 - 302	81	CAP., CER. 50v +5% 3000pf	C17	1	
102669 - 911	82	CAP., CER. 50v +5% 910pf	C18, 19	2	
102669 - 221	83	CAP., CER. 50v +5% 220pf	C20	1	
102669 - 101	84	CAP., CER. 50v +5% 100pf	C22	1	
102669 - 131	85	CAP., CER. 50v +5% 130pf	C21	1	
102669 - 200	86	CAP., CER. 50v +5% 20pf	C2	1	
-	87				
122502 - 001	88	INDUCTOR, 10uh +5%, 290ma	L7, 8	2	
-	89				
122502 - 004	90	INDUCTOR, 120uh +5%, 124ma	L1, 2	2	
122502 - 007	91	INDUCTOR, 750uh +5%, 79ma	L3, 4	2	
122502 - 005	92	INDUCTOR, 160uh +5%, 111ma	L5, 6	2	
102002 - 001	93	BUS BAR - VERTICAL		1	
100143 - 002	94	PAD, TRANSISTOR, TO-5	XQ1, 2	2	
120905 - 011	95	HEADER, DOUBLE ROW, STRAIGHT	5C	1	
120916 - 001	96	HEADER, RIGHT ANGLE	J13	1	
120916 - 002	97	HEADER, RIGHT ANGLE	J11, 12	1	



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
101156 - 161	36	RESISTOR, 1/4w +5% 160	R90	1	
101156 - 473	37	RESISTOR, 1/4w +5% 47K	R91, 94	2	
101156 - 122	38	RESISTOR, 1/4w +5% 1.2K	R80	1	
101156 - 101	39	RESISTOR, 1/4w +5% 100	R82-85	4	
101156 - 470	40	RESISTOR, 1/4w +5% 47	R4	1	
101156 - 682	41	RESISTOR, 1/4w +5% 6.8K	R14, 15, 17, 19, 20	5	
101156 - 121	42	RESISTOR, 1/4w +5% 120	R2, 3	2	
101156 - 511	43	RESISTOR, 1/4w +5% 510	34, 35, 49, 50, 51	5	
101156 - 303	44	RESISTOR, 1/4w +5% 30K	R45, 46	2	
101156 - 100	45	RESISTOR, 1/4w +5% 10	R23	1	
101156 - 221	46	RESISTOR, 1/4w +5% 220	R54	1	
101156 - 330	47	RESISTOR, 1/4w +5% 33	R48	1	
101156 - 102	48	RESISTOR, 1/4w +5% 1K	R13, 16, 18, 38, 41, 42, 47, 55, 87, 89	10	
101156 - 332	49	RESISTOR, 1/4w +5% 3.3K	R73, 74	2	
101156 - 203	50	RESISTOR, 1/4w +5% 20K	R43	1	
101156 - 152	51	RESISTOR, 1/4w +5% 1.5K	R69	1	
101156 - 272	52	RESISTOR, 1/4w +5% 2.7K	R97	1	
101156 - 392	53	RESISTOR, 1/4w +5% 3.9K	R98	1	
100155 - 232	54	RESISTOR, 1/4w +1% 255	R5	1	
100155 - 181	55	RESISTOR, 1/4w +1% 75	R1	1	
100155 - 351	56	RESISTOR, 1/4w +1% 4.42K	R32, 33	2	



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
120915 - 024	98	HEADER, RT. ANGLE	J4-7	1	
120915 - 007	99	HEADER, RT. ANGLE	J3	1	
105084 - 001	100	CONNECTOR-HOUSING, 4 POS.	J2	1	
106019 - 001	101	CONTACT-PIN	J2	4	
100360 - 001	102	PIN, WIRE WRAP .025 SQ.	TP1-9	9	
104903 - 001	103	CLIP, JUMPER .025 SQ. POST	5C	2	
100171 - 002	104	TY-RAP 1/16-1/4	J2	1	
150107 - 001	105	TAPE, DOUBLE COATED POLYURETHANE FOAM	Y1	1	
164021 - 926	106	WIRE, HOOKUP 26 AWG	CF2, R22, R62	2	
-					
100121 - 001	108	DIODE, ZENER (1N5221) 2.4V ±10%	VR1	1	
-					
207002 - 100	110	ASSY DWG		0	
207000 - 001	111	PRINTED MASTER		0	
100155 - 437	113	RESISTOR, 1/4w ±1% 34.8K	R45	1	
-					
-					
-					
-					
-					
-					
-					



5 52 61
S 7 0 1 1 207002 - 002 REV B
ARMED & DANGEROUS

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY WHOLE DECIMAL		U.S. CODE
19		20			17	18	19
207002	- 200	1	SCHEMATIC		0		
207001	- 001	2	PROCESS BOARD		1		
123234	- 001	3	I.C. 74S240	2A	1		
123031	- 001	4	I.C. 74LS04	1B, 3B, 1D, 5D	4		
125017	- 012	5	I.C. MA78L12	4B	1		
101031	- 001	6	I.C. 75452	5Ba, 5Bb	2		
125011	- 001	7	I.C. LM339	6C	1		
123038	- 001	8	I.C. 74LS86	7C	1		
123123	- 001	9	I.C. 74LS09	2D	1		
123030	- 001	10	I.C. 74LS02	4D	1		
123036	- 001	11	I.C. 74LS74	3D, 6D, 5E	3		
100331	- 001	12	I.C. 7406	7D	1		
101139	- 001	13	I.C. 75451	2G	1		
100234	- 001	14	I.C. 9602	4E	1		

PREPARED BY Sue Redmond	CHECKED BY [Signature]	DESIGN ENGINEER [Signature]	DAYS 1-14-82	O412494	DATE 11/10/81	B	12636	A	E.R.O. 12/24/81	SWAN 11/10/82	STAMP [Stamp]	DRG REL NO. 820287	DATE 2 | 1 | 82
			1-28-82	0312435	12/18/82							NEXT ASSEMBLY 207358	M M D D Y Y
			1-29-82	0212315	11/16/81	B		A				MODEL NO. 207358	
				0212185	11/16/81								
				01 P/L REL									
				REV ECO	DATE / SIGNATURE	REV ECO	DATE / SIGNATURE						

0420-90

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S 7 0 1 1	M P	207002 — 002	REV 8
ASSEMBLY PARTS NUMBER			

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE 12	DECIMAL 18			
	123239	- 001	15	I.C. LM319	7E	1				
	101032	- 001	16	I.C. NE592	5F,7F	2				
	207030	- 001	17	ASSY, FROM - 8 BIT MICROCOMPUTER	3-4C	1				
	123029	- 001	18	I.C. 74LS00	6E	1				
	146014	- 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2				
	146014	- 040	20	SOCKET, DIP - 40 CONTACTS	3-4C	1				
	146014	- 016	21	SOCKET, DIP - 16 CONTACTS	3A	1				
	120909	- 003	22	HEADER, PROGRAM-DIP	2B	1				
	151032	- 001	23	TRANSISTOR, PNP Q2T2905	2E	1				
	151030	- 001	24	TRANSISTOR, NPN 2N3904	Q3-7	5				
	151033	- 001	25	TRANSISTOR, NPN MM3007	Q1,2	2				
	107201	- 001	26	DIODE 1N4150	CR1-14,CR18-25	22				
	107005	- 001	27	LED, INDICATOR MV5054-2	CR16	1				
	106500	- 014	28	CRYSTAL - 3.579545 MHZ	Y1	1				
	100064	- 121	29	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 120	R70	1				
	101156	- 472	30	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 4.7K	57,59,60,79,81	5				
	101156	- 471	31	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 470	56	1				
	101156	- 681	32	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 680	R7,10,58,61	4				
	101156	- 103	33	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 10K	64,65,67,71,75,76,78, 86,88,92,93,96	12				
	101156	- 333	34	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 33K	28,30	2				
	101156	- 104	35	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 100K	R63,66,72,77	4				

FORM 795B (R 09/80)

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S 7 0 1 1	M P	207002	- 002	RE 8
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ASSEMBLY PARTS NUMBER

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
	101156	161	36 RESISTOR, $\frac{1}{2}W$ +5% 160	R90	1		
	101156	473	37 RESISTOR, $\frac{1}{2}W$ +5% 47K	R91, 94	2		
	101156	122	38 RESISTOR, $\frac{1}{2}W$ +5% 1.2K	R80	1		
	101156	101	39 RESISTOR, $\frac{1}{2}W$ +5% 100	R82-85	4		
	101156	470	40 RESISTOR, $\frac{1}{2}W$ +5% 47	R4	1		
	101156	682	41 RESISTOR, $\frac{1}{2}W$ +5% 6.8K	R14, 15, 17, 19, 20	5		
	101156	121	42 RESISTOR, $\frac{1}{2}W$ +5% 120	R2, 3			
	101156	511	43 RESISTOR, $\frac{1}{2}W$ +5% 510	34, 35, 49, 50, 51	5		
	101156	303	44 RESISTOR, $\frac{1}{2}W$ +5% 30K	R45, 46	2		
	101156	100	45 RESISTOR, $\frac{1}{2}W$ +5% 10	R23	3		
	101156	221	46 RESISTOR, $\frac{1}{2}W$ +5% 220	R54	1		
	101156	330	47 RESISTOR, $\frac{1}{2}W$ +5% 33	R48	1		
	101156	102	48 RESISTOR, $\frac{1}{2}W$ +5% 1K	R13, 16, 18, 41, 42, 47, 55, 73, 74, 87, 89	11		
	101156	302	49 RESISTOR, $\frac{1}{2}W$ +5% 3K	R38	1		
	101156	203	50 RESISTOR, $\frac{1}{2}W$ +5% 20K	R43	1		
	101156	152	51 RESISTOR, $\frac{1}{2}W$ +5% 1.5K	R69	1		
	101156	272	52 RESISTOR, $\frac{1}{2}W$ +5% 2.7K	R97	1		
	101156	392	53 RESISTOR, $\frac{1}{2}W$ +5% 3.9K	R98	1		
	100155	232	54 RESISTOR, $\frac{1}{2}W$ +1% 255	R5	1		
	100155	181	55 RESISTOR, $\frac{1}{2}W$ +1% 75	R1	1		
	100155	351	56 RESISTOR, $\frac{1}{2}W$ +1% 4.42K	R32, 33	2		

FORM 795B (R 09/80)

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S 7 0 1 1	M P	207002 — 002	REV B
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ASSEMBLY PARTS NUMBER

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						WHOLE 17	DECIMAL 18	
M P	100155	- 385	57	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R25,26,36,37,52	5		
M P	100155	- 289	58	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 1K	R29,39	2		
M P	100155	- 254	59	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 432	R8	1		
M P	100155	- 302	60	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 1.37K	R31	1		
M P	100155	- 347	61	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.02K	R40,44	2		
M P	100155	- 415	62	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20.5K	R53,95	2		
M P	142027	- 003	63	TERMINATOR - 14 PIN 220/330 OHM	1A	1		
M P	142032	- 001	64	TERMINATOR - 16 PIN 220/330 OHM	3A	1		
M P	138002	- 104	65	POTENTIOMETER $\frac{1}{2}w$, 100K	R27	1		
M P	102769	- 475	66	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C32	1		
M P	102768	- 226	67	CAP., TANT. 10v $\pm 20\%$ 22uf	C35,51,52	3		
M P	102768	- 225	68	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C28,38	2		
M P	102871	- 225	69	CAP., TANT. 20v $\pm 20\%$ 2.2uf	C34	1		
M P	102870	- 685	70	CAP., TANT. 4v $\pm 20\%$ 6.8uf	C11,13	2		
	102665	- 104	71	CAP., CER. 50v $\pm 20\%$ 1 uf	C1,5,7-10,12,14,15, 23-27,29-31,33,36, C39-42	23		
	-							
	102667	- 104	72	CAP., CER. 50v $\pm 10\%$.1 uf	C44,45	2		
	102667	- 102	73	CAP., CER. 50v $\pm 10\%$.001 uf	C43,46-49	5		
	102667	- 472	74	CAP., CER. 50v $\pm 10\%$.0047uf	C37	1		
	102666	- 479	75	CAP., CER. 50v $\pm 5\%$ 4.7pf	C50	1		
	102669	- 331	76	CAP., CER. 50v $\pm 5\%$ 330pf	C17	1		

FORM 705B (R 08/80)

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S 7 0 1 1	M P	207002 — 002	RE B
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ASSEMBLY PARTS NUMBER

IN	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
M P	102669 - 301	77	CAP., CER. 50v +5% 300pf	C18,19	2		
M P	102669 - 750	78	CAP., CER. 50v +5% 75pf	C20	1		
M P	102669 - 330	79	CAP., CER. 50v +5% 33pf	C16,21,22	3		
M P	-	80					
M P	-	81					
M P	-	82					
M P	-	83					
M P	-	84					
M P	-	85					
M P	102669 - 200	86	CAP., CER. 50v +5% 20pf	C2	1		
M P	122502 - 003	87	INDUCTOR 56uh +5%, 164ma	L5,6	2		
M P	122502 - 001	88	INDUCTOR 10uh +5%, 290ma	L7,8	2		
M P	122502 - 006	89	INDUCTOR 240uh +5%, 101ma	L3,4	2		
M P	122502 - 004	90	INDUCTOR 120uh +5%, 124ma	L1,2	2		
	-	91					
	-	92					
	102002 - 001	93	BUS BAR - VERTICAL		1		
	100143 - 002	94	PAD, TRANSISTOR, TO-5	Q1,2	2		
M G	120905 - 011	95	HEADER, DOUBLE ROW, STRAIGHT	5C	1		
	120916 - 001	96	HEADER, RIGHT ANGLE	J13	1		
	120916 - 002	97	HEADER, RIGHT ANGLE	J11,12	1		

FORM 7500 (R 09/90)

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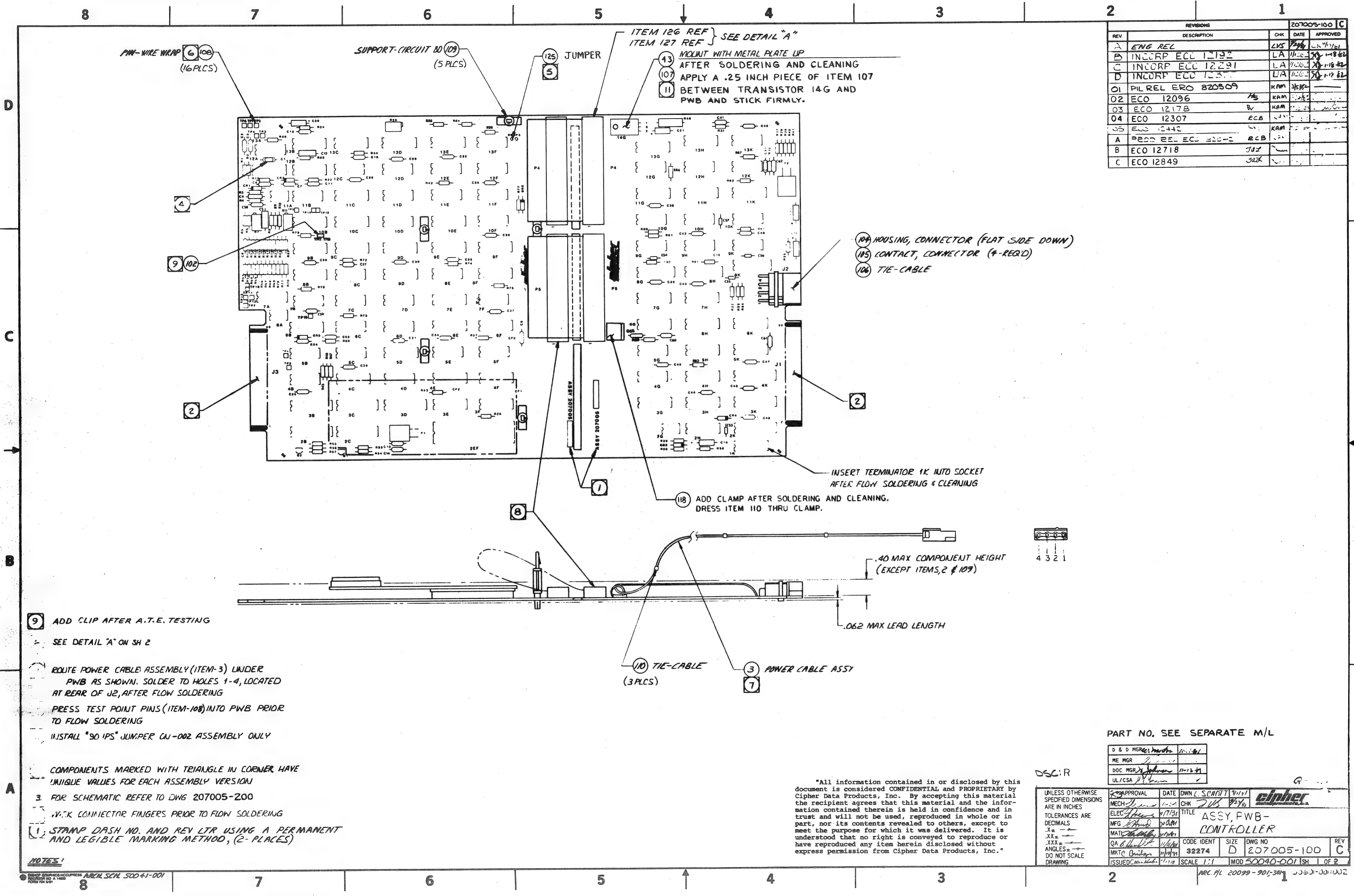
S 7 0 1 1	M P	207002	- 002
ASSEMBLY PARTS NUMBER			
QUANTITY		U.M.	

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	WHOLE	DECIMAL	18	CODE
MP	120915 - 024	98	HEADER, RIGHT ANGLE	J4-7	1				
MP	120915 - 007	99	HEADER, RIGHT ANGLE	J3	1				
MP	105084 - 001	100	CONNECTOR-HOUSING, 4 PIN	J2	1				
MP	106019 - 001	101	CONTACT, PIN	J2	4				
MP	100360 - 001	102	PIN, WIRE WRAP, .025 SQ.	TP1-9	9				
MP	104903 - 001	103	CLIP, JUMPER, .025 SQ. POST	5C	2				
MP	100171 - 002	104	TY-RAP 1/16-1 1/4	J2	1				
MP	150107 - 001	105	TAPE, DOUBLE COATED POLYURETHANE FOAM	Y1				1	
MP	-	106							
MP	164021 - 926	107	WIRE, HOOKUP 26 AWG	R22,62				1	
MP	100121 - 001	108	DIODE, ZENER (1N5221) 2.4V ±10%	VR1					
MP	-								
MP	207002 - 100	110	ASSY, DWG		0				
MP	207000 - 001	111	PRINTED MASTER		0				
MP	100155 - 437	113	RESISTOR, 1/4W ±1% 34.8K	R45	1				
MP	-								
MP	-								
MP	-								
MP	-								
MP	-								
MP	-								
MP	-								

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1000



REVISIONS				207005-100 C	
REV	DESCRIPTION	CHK	DATE	APPROVED	
A	ENG REL	LVS	11/1/81		
B	INCRP ECO 12192	LA	11/1/81		
C	INCRP ECO 12291	LA	11/1/81		
D	INCRP ECO 12307	LA	11/1/81		
01	PIL REL ERO 820509	KAM	3/5/82		
02	ECO 12096	AS	KAM		
03	ECO 12178	BV	KAM		
04	ECO 12307	ECB	KAM		
05	ECO 12442	LA	KAM		
A	PROD REL ECO 12192	ECB			
B	ECO 12718	JAZ			
C	ECO 12849	JAZ			

- 9 ADD CLIP AFTER A.T.E. TESTING
SEE DETAIL A ON SH 2
- ROUTE POWER CABLE ASSEMBLY (ITEM-3) UNDER PWB AS SHOWN. SOLDER TO HOLES 1-4, LOCATED AT REAR OF J2, AFTER FLOW SOLDERING
- PRESS TEST POINT PINS (ITEM-108) INTO PWB PRIOR TO FLOW SOLDERING
- INSTALL .90 IPS JUMPER CAI-002 ASSEMBLY ONLY
- COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSEMBLY VERSION
- FOR SCHEMATIC REFER TO DWG 207005-200
- WIRE CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- STAMP DASH NO. AND REV LTR USING A PERMANENT AND LEGIBLE MARKING METHOD, (2- PLACES)

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PART NO. SEE SEPARATE M/L

D & D MGR	11/1/81
ME MGR	
DOC MGR	11/1/81
UL/CSA	

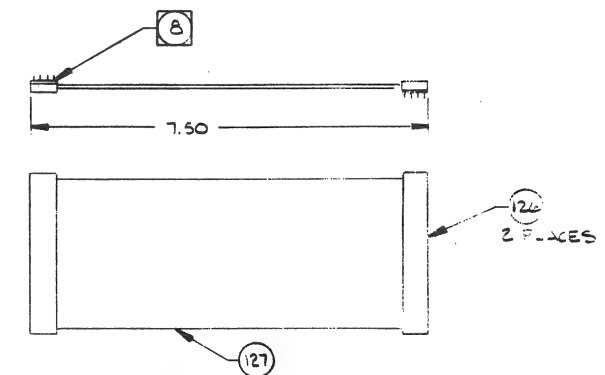
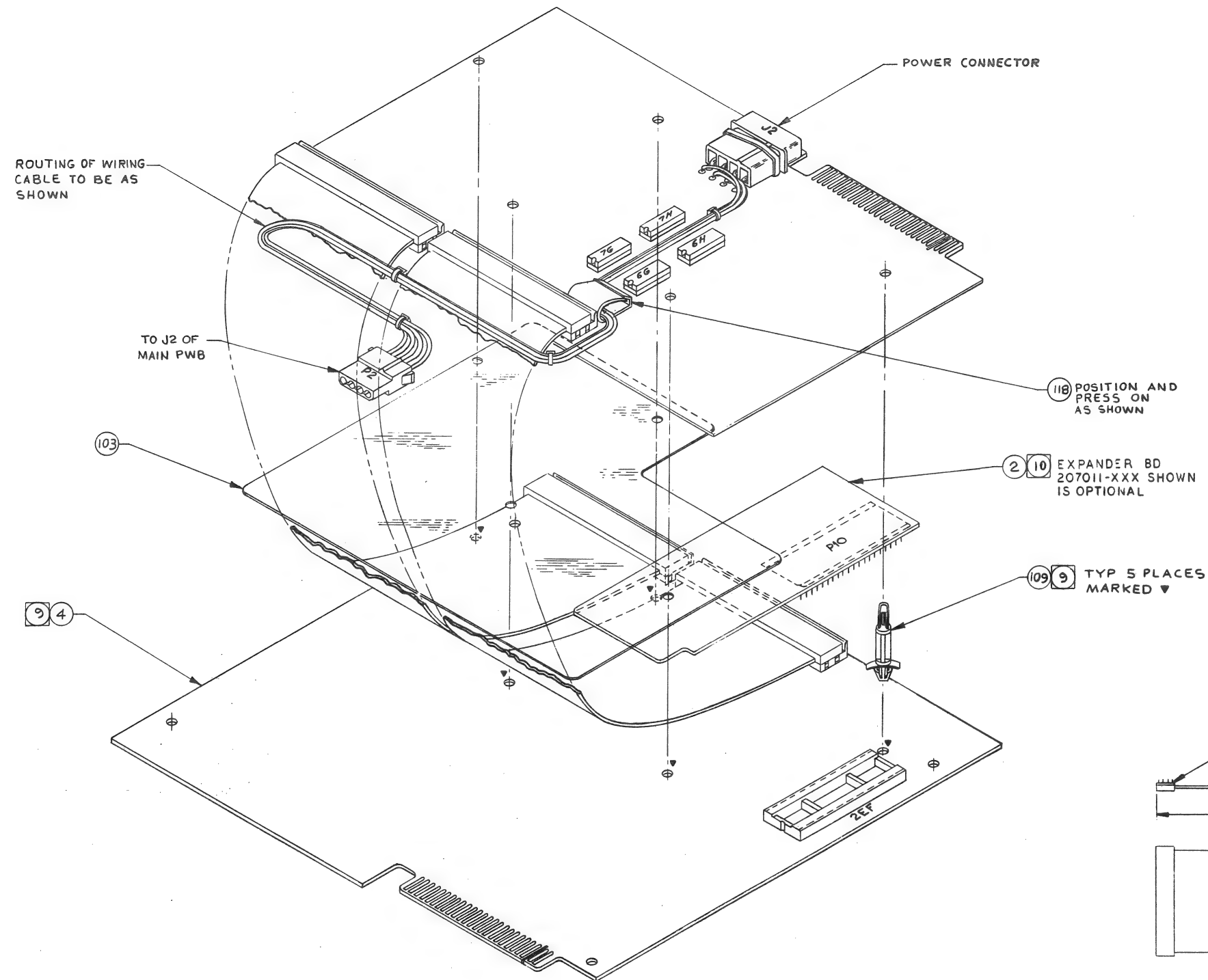
DSC:R

APPROVAL	DATE	OWN	DATE	REV
MECH	11/1/81	CHK	11/1/81	
ELEC	11/1/81	TITLE	ASSY, PWB- CONTROLLER	
MFG	11/1/81	CODE IDENT	32274	
MATE	11/1/81	SIZE	D	
QA	11/1/81	DWG NO	207005-100	
MKTG	11/1/81	SCALE	1:1	
ISSUED	11/1/81	MOD	50040-001 SH	

1 OF 2

ARC. PL 20099-901-301

REVISIONS				207005-100C	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
—	SEE SHT 1	—	—	—	



DETAIL "A"
2 PLACES
SCALE: NONE

- 1 SEE DETAIL "B"
- 10 PLUG ITEM 2 (MICROCOMPUTER ASSEMBLY) INTO SOCKET OF CONTROLLER PWB AT POSITION 2EF AS SHOWN.
- 9 BREAK ITEM 4 (CONTROLLER PWB) AT SLOTS BETWEEN P4 AND P5 CABLES. CUT OFF EXCESS TABS AND MOUNT PWBS USING ITEM 109 (SUPPORT) AS SHOWN.

NOTES: UNLESS OTHERWISE SPECIFIED

SCALE 1:1	SIZE D	207005-100		REV. C
DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 2 OF 2		



ASSEMBLY PARTS LIST

ASSEMBLY TITLE: ASSY, PWB - CONTROLLER - 30 IPS		DSC: R		DOC CODE: Q120		S 7 0 1 1		207005 - 001		REV N	
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
207005-200		1		SCHEMATIC				0			
207041-001		2		ASSY, 8-BIT EXPANDER MICROCOMPUTER		2 EF(207011-001) OPTIONAL		1			
207021-001		3		ASSY, POWER CABLE - CONTROL				1			
207004-001		4		PROCESS BOARD				1			
123029-001		5		I.C. 74LS00		7B, 11D		2			
123149-001		6		I.C. 74LS01		13F		1			
123031-001		7		I.C. 74LS04		10D, 12E, 12K		3			
123032-001		8		I.C. 74LS08		5C, 5G		2			
123034-001		9		I.C. 74LS11		10F		1			
123047-001		10		I.C. 74LS14		5B		1			
123035-001		11		I.C. 74LS32		5F, 11F		2			
123093-001		12		I.C. 74LS51		7A		1			
123084-001		13		I.C. 74LS109		13E		1			
123100-001		14		I.C. 74LS138		11C, 5D, 10E		3			
PREPARED BY: SUE REDMOND		DATE: 01-14-82		M 12849				DWG REL NO. 820287		DATE: 02-01-82	
CHECKED BY: GIL PEREZ		DATE: 01-26-82		L 12771				NEXT ASSEMBLY: 207350		DATE: 01-26-82	
DESIGN ENGINEER: GIL PEREZ		DATE: 01-29-82		K 12741				MODEL NO. F420-30			
REV 1: J REDWN		DATE: 01-29-82		N 12986							
REV 2: J REDWN		DATE: 01-29-82									

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ASSEMBLY PARTS LIST

S 7 0 1 1		M P		207005 - 001		REV N					
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
123085-001		15		I.C. 74LS139		11G		1			
123095-001		16		I.C. 74LS153		3E, 4E, 3F, 4F		4			
123231-001		17		I.C. CD4502B		9B, 9C		2			
123090-001		18		I.C. 74LS163		9D, 13D		2			
123086-001		19		I.C. 74LS164		4D, 5E, 13K		3			
123232-001		20		I.C. 74LS166		4C, 7E, 13G, 2H		4			
123096-001		21		I.C. 74LS174		10C, 9E, 11H		3			
123045-001		22		I.C. 74LS175		4H, 5H, 5K		3			
123233-001		23		I.C. 74LS195		3G, 3H		2			
123097-001		24		I.C. 74LS367		6G, 7G, 6H, 7H, 6K		5			
123091-001		25		I.C. 74LS374		3C		1			
123203-001		26		I.C. 74LS393		9G, 10G, 9H, 10K, 9K		5			
123234-001		27		I.C. 74S240		2B, 3B, 3K, 4K		4			
100234-001		28		I.C. 9602		12B, 13B		2			
123245-001		29		I.C. 9401		13A, 11E		2			
100345-001		30		I.C. MC4044P		8E		1			
123069-001		31		I.C. 74S124		12A		1			
123235-001		32		I.C. MC14040		13C, 6F, 8F		3			
207029-001		33		ASSY, PROM 512 X 4 (READ SEQUENCER)		10B		1			
207026-001		34		ASSY, PROM 256 X 4 (WRITE SEQUENCER)		9F		1			
207024-001		35		ASSY, PROM 32 X 8 (READ DECODER)		6E		1			

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ASSEMBLY PARTS LIST

S 7 0 1 1		M P		207005 - 001		REV N					
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
123238-001		36		I.C. MM5257N-25		8G, 8H, 8K		3			
125040-001		37		I.C. TL082P		11A		1			
101022-001		38		I.C. LM311		2G		1			
123036-001		39		I.C. 74LS74		11B, 6C, 12D, 12F, 12G, 12H		6			
100336-001		40		I.C. 7438		4B		1			
207027-001		41		ASSY, PROM 256 X 4 (HOST SEQUENCER)		11K		1			
207025-001		42		ASSY, PROM 32 X 8 (WRITE ENCODER)		13H		1			
125006-005		43		I.C. UA7805UC		14G		1			
123237-001		44		I.C. 74LS373		3D		1			
123023-001		45		I.C. 74S74		7D, 6D, 7F		3			
123028-001		46		I.C. 74S00		8C		1			
123046-001		47		I.C. 74S04		7C		1			
101031-001		48		I.C. 75452		6A		1			
123119-001		49		I.C. 74S163		8D		1			
123120-001		50		I.C. 74S174		8B		1			
123152-001		51		I.C. 74LS273		2C		1			
146014-016		52		SOCKET, DIP - 16 CONTACTS		1K, 6B		2			
146014-040		53		SOCKET, DIP - 40 CONTACTS		2EF		1			
107201-001		54		DIODE 1N4150		CR1, 3-6		5			
100373-012		55		DIODE, ZENER 1N759A		CR2		1			
106500-114		56		CRYSTAL 3.579545 MHZ		Y2		1			

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ASSEMBLY PARTS LIST

S 7 0 1 1		M P		207005 - 001		REV N					
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
106500-115		57		CRYSTAL 6.00 MHz		Y1		1			
101156-105		58		RESISTOR, 1/4w +5% 1.0M		R59		1			
101156-302		59		RESISTOR, 1/4w +5% 3K		R2, 8		2			
101156-750		60		RESISTOR, 1/4w +5% 75		R20, 42		2			
101156-392		61		RESISTOR, 1/4w +5% 3.9K		R87		1			
101156-511		62		RESISTOR, 1/4w +5% 510		R3, 5, 19, 35		4			
101156-102		63		RESISTOR, 1/4w +5% 1K		R1, 28, 29, 31-34, 36-41, 47, 51, 52, 55, 60-62, 64-66, R73-77, 79		29			
101156-472		64		RESISTOR, 1/4w +5% 4.7K		R26, 27, 43, 45, 46, 56, 57, 86		8			
101156-512		65		RESISTOR, 1/4w +5% 5.1K		R23, 44		2			
101156-103		66		RESISTOR, 1/4w +5% 10K		R24, 78		2			
101156-362		67		RESISTOR, 1/4w +5% 3.6K		R6, 80-82		4			
101156-333		68		RESISTOR, 1/4w +5% 33K		R13, 14		2			
101156-473		69		RESISTOR, 1/4w +5% 47K		R22, 58		2			
101156-244		70		RESISTOR, 1/4w +5% 240K		R30		1			
100155-164		71		RESISTOR, 1/4w +1% 49.9		R53		1			
101156-203		72		RESISTOR, 1/4w +5% 20K		R72		1			
101156-562		73		RESISTOR, 1/4w +5% 5.6K		R4		1			
101156-154		74		RESISTOR, 1/4w +5% 150K		R12		1			
100155-232		75		RESISTOR, 1/4w +1% 255		R54		1			
100155-414		76		RESISTOR, 1/4w +1% 20K		R9, 10, 15, 16, 21, 50, 68, 70		8			

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ASSEMBLY PARTS LIST

S 7 0 1 1		M P		207005 - 001		REV N					
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
100155-385		77		RESISTOR, 1/4w +1% 10K		R18, 49, 69, 71		4			
100155-443		78		RESISTOR, 1/4w +1% 40.2K		R17, 67		2			
101156-271		79		RESISTOR, 1/4w +5% 270 OHMS		R63		1			
100067-101		80		RESISTOR, 1w +5% 100		R48		1			
138002-503		81		POTENTIOMETER 1/4w, 50K		R11		1			
138002-103		82		POTENTIOMETER 1/4w, 10K		R25, 87		2			
138002-502		83		POTENTIOMETER 1/4w, 5K		R7		1			
142032-002		84		TERMINATOR, 16 PIN, 180/390 OHM		1K		1			
102768-225		85		CAP., TANT. 10v +20% 2.2uf		C15		1			
102768-475		86		CAP., TANT. 10v +20% 4.7uf		C20		1			
102768-226		87		CAP., TANT. 10v +20% 22uf		C16		1			
102769-475		88		CAP., TANT. 35v +20% 4.7uf		C17, 21		2			
102668-472		89		CAP., CER. 50v +5% 4700pf NPO		C4		1			
102665-104		90		CAP., CER. 50v +20+80% 0.10uf Z5U		C2, 3, 6, 7, 8, 24-50		32			
102669-301		91		CAP., CER. 100v +5% 300pf NPO		C9, 10, 60, 61, 63		5			
102667-563		92		CAP., CER. 100v +10% .056uf X7R		C5		1			
102669-150		93		CAP., CER. 100v +5% 15pf NPO		C14		1			
102669-330		94		CAP., CER. 100v +5% 33pf NPO		C1		1			
102669-911		95		CAP., CER. 100v +5% 910pf NPO		C13		1			
102668-122		96		CAP., CER. 50v +5% 1200pf NPO		C19		1			
102668-822		97		CAP., CER. 50v +5% 8200pf NPO		C12		1			

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ASSEMBLY PARTS LIST

S 7 0 1 1		M P		207005 - 001		REV N					
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
102666-479		98		CAP., CER. 50v +5% 4.7pf		C51		1			
102669-561		99		CAP., CER. 100v +5% 560pf NPO		C52		1			
151031-001		100		TRANSISTOR, PNP 2N3906		Q1		1			
151030-001		101		TRANSISTOR, NPN 2N3904		Q2		1			
104903-001		102		CLIP, JUMPER .025 SQ POST		TP17-18		1			
207338-001		103		SHIELD, CABLE							
105084-001		104		CONNECTOR-HOUSING, 4 PIN		J2		1			
106019-001		105		CONTACT, PIN		J2		4			
100171-002		106		TY-RAP 1/16 - 1 1/2		J2		1			
150107-001		107		TAPE, DOUBLE COATED POLYURETHANE FOAM		14G		5 06			
100360-001		108		PIN, WIRE WRAP, .025 SQ.		TP1-18		18			
147805-001		109		SUPPORT, CIRCUIT BOARD				5			
100171-001		110		TY-RAP 1/16 to 5/8				3			
102668-272		111		CAP., CER. 50v +5% 2700pf NPO		C11		1			
102664-103		112		CAP., CER. 50V-20% +80% 0.01uf Z5U		C53-C57		5			
102667-102		113		CAP., CER. 100WVDC +10% 1000pf		C62		1			
101156-682		115		RESISTOR, 1/4w +5% 6.8K		R83		1			
101156-331		116		RESISTOR, 1/4w +5% 330		R84		1			
101156-221		117		RESISTOR, 1/4w +5% 220		R85		1			
104804-001		118		CLAMP, CABLE				1			

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ASSEMBLY PARTS LIST

(CONTINUATION)

S 7 0 1 1

M P

207005 - 002


REV P

ASSEMBLY PARTS NUMBER

19	PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						WHOLE 12	DECIMAL 18	
M P	123238	- 001	36	I.C. MM5257N-25	8G, 8H, 8K	3		
M P	125040	- 001	37	I.C. TL082P	11A	1		
M P	101022	- 001	38	I.C. LM311	2G	1		
M P	123036	- 001	39	I.C. 74LS74	11B, 6C, 12D, 12G, 12H	5		
M P	100336	- 001	40	I.C. 7438	4B	1		
M P	207027	- 001	41	ASSY. FROM 256 X 4 (HOST SEQUENCER)	11K	1		
M P	207025	- 001	42	ASSY. FROM 32 X 8 (WRITE ENCODER)	13H	1		
M P	125006	- 005	43	I.C. UA7805UC	14G	1		
M P	123237	- 001	44	I.C. 74LS373	3D	1		
M P	123023	- 001	45	I.C. 74S74	7D, 6D, 7F	3		
M P	123028	- 001	46	I.C. 74S00	8C	1		
M P	123046	- 001	47	I.C. 74S04	7C	1		
M P	101031	- 001	48	I.C. 75452	6A	1		
M P	123119	- 001	49	I.C. 74S163	8D	1		
M P	123120	- 001	50	I.C. 74S174	8B	1		
M P	123152	- 001	51	I.C. 74LS273	2C	1		
M P	146014	- 016	52	SOCKET, DIP - 16 CONTACTS	1K, 6B	2		
M P	146014	- 040	53	SOCKET, DIP - 40 CONTACTS	2EF	1		
M P	107201	- 001	54	DIODE 1N4150	CR1, 3-6	5		
M P	100373	- 012	55	DIODE, ZENER 1N759A	CR2	1		
M P	106500	- 114	56	CRYSTAL 3.579545 MHZ	Y2	1		

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ASSEMBLY PARTS LIST

(CONTINUATION)

S 7 0 1 1 M P 207005 — 002 REV

ASSEMBLY PARTS NUMBER

	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE	
					WHOLE	DECIMAL		
	19	28			12	18		
M P	106500 — 115	57	CRYSTAL 6.00 MHz	Y1	1			
M P	101156 — 105	58	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 1.0M	R59	1			
M P	101156 — 308	59	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 3K	R2	1			
M P	101156 — 750	60	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 75	R20, 42	2			
M P	101156 — 392	61	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 3.9K	R87	1			
M P	101156 — 511	62	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 510	R3, 19, 35	3			
M P	101156 — 102	63	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 1K	R1, 28, 29, 31-34, 36-41, 47, 51, 52, 55, 60-62, 64-66, R73-77, 79	29			
M P	—							
M P	101156 — 472	64	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 4.7K	R26, 27, 43, 45, 46, 56, 57, 86	8			
M P	101156 — 512	65	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 5.1K	R23, 44	2			
M P	101156 — 103	66	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 10K	R24, 78	2			
M P	101156 — 362	67	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 3.6K	R6, 80-82	4			
M P	101156 — 333	68	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 33K	R13, 14	2			
M P	101156 — 473	69	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 47K	R22, 58	2			
	101156 — 244	70	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 240K	R30	1			
	100155 — 164	71	RESISTOR, $\frac{1}{4}w$ $\pm 1\%$ 49.9	R53	1			
	101156 — 203	72	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 20K	R72	1			
	101156 — 562	73	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 5.6K	R4, 8	2			
	101156 — 823	74	RESISTOR, $\frac{1}{4}w$ $\pm 5\%$ 82K	R12	1			
	100155 — 232	75	RESISTOR, $\frac{1}{4}w$ $\pm 1\%$ 255	R54	1			
	100155 — 414	76	RESISTOR, $1/4w$ $\pm 1\%$ 20K	R9, 10, 15, 16, 21, 50, 68, 70	8			

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PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
					WHOLE	DECIMAL			
19	100155 - 385	77	RESISTOR, 1/4w +1% 10K	R18,49,69,71	4				
MP	100155 - 443	78	RESISTOR, 1/4w +1% 40.2K	R17,67	2				
MP	101156 - 271	79	RESISTOR, 1/4w ± 5% 270 OHMS	R63	1				
MP	100067 - 101	80	RESISTOR, 1w +5% 100	R48	1				
MP	138002 - 503	81	POTENTIOMETER 1/2w, 50K	R11	1				
MP	138002 - 103	82	POTENTIOMETER 1/2w, 10K	R25,R7	2				
MP	138002 - 502	83	POTENTIOMETER 1/2w, 5K	R7	1				
MP	142032 - 002	84	TERMINATOR, 16 PIN, 180/390 OHM	1K	1				
MP	102768 - 225	85	CAP., TANT. 10v+20% 2.2uF	C15	1				
MP	102768 - 475	86	CAP., TANT. 10v +20% 4.7uF	C20	1				
MP	102768 - 226	87	CAP., TANT. 10v +20% 22uF	C16	1				
MP	102769 - 475	88	CAP., TANT. 35v +20% 4.7uF	C17,21	2				
MP	102668 - 472	89	CAP., CER. 50v +5% 4700pF NPO	C4,5	2				
MP	102665 - 104	90	CAP., CER. 50v -20+80% 0.10uF Z5U	C2,3,6,7,8,24-50	32				
MP	102669 - 301	91	CAP., CER. 100v +5% 300pF NPO	C9,10,13,60,61,63	6				
MP	-	92							
MP	102669 - 150	93	CAP., CER. 100v +5% 15pF NPO	C14	1				
MP	102673 - 829	94	CAP., CER. 100 V ± 5% 8.2pF NPO	C1	1				
MP	-	95							
MP	102668 - 391	96	CAP., CER. 50v +5% 390pF NPO	C19	1				
MP	102668 - 272	97	CAP., CER. 50v +5% 2700pF NPO	C12	1				

ASSEMBLY PARTS LIST									
(CONTINUATION)									
S 7 0 1 1 M P 207005 - 002 REF P									
ASSEMBLY PARTS NUMBER									
19	20	21	22	23	24	25	26	27	28
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	WHOLE	DECIMAL	U.M.	CODE	REV
M P 102666 - 479	98	CAP., CER. 50v $\pm 5\%$ 4.7pf	C51	1					
M P 102669 - 561	99	CAP., CER. 100v $\pm 5\%$ 560pf NPO	C52	1					
M P 151031 - 001	100	TRANSISTOR, PNP 2N3906	Q1	1					
M P 151030 - 001	101	TRANSISTOR, NPN 2N3904	Q2	1					
M P 104903 - 001	102	CLIP, JUMPER .025 SQ POST	TP17-18	1					
M P 207338 - 001	103	SHIELD, CABLE		1					
M P 105084 - 001	104	CONNECTOR-HOUSING, 4 PIN	J2	1					
M P 106019 - 001	105	CONTACT, PIN	J2	4					
M P 100171 - 002	106	TY-RAP 1/16-14	J2	1					
M P 150107 - 001	107	TAPE, DOUBLE COATED POLYURETHANE FOAM	146				5	06	
M P 100360 - 001	108	PIN, WIRE WRAP, .025 SQ.	TP1-18	18					
M P 147805 - 001	109	SUPPORT, CIRCUIT BOARD		5					
M P 100171 - 001	110	TY-RAP 1/16 TO 5/8		3					
M P 102669 - 911	111	CAP., CER. 100v $\pm 5\%$ 910pf NPO	C11	1					
M P 102664 - 103	112	CAP., CER. 50V-20% $\pm 80\%$ 0.01uf 250	C53-C57	5					
M P 102667 - 102	113	CAP., CER. 100VDC $\pm 10\%$ 1000pf	C62	1					
M P 101156 - 202	114	Resistor, 1/4W $\pm 5\%$ 2K	R5	1					
M P 101156 - 682	115	RESISTOR, 1/4W $\pm 5\%$ 6.8K	R83	1					
M P 101156 - 331	116	RESISTOR, 1/4W $\pm 5\%$ 330	R84	1					
M P 101156 - 221	117	RESISTOR, 1/4W $\pm 5\%$ 220	R85	1					
M P 104804 - 001	118	CLAMP, CABLE		1					

FORM 795 (R 03/82)

PAGE 5 OF 10

ASSEMBLY PARTS LIST									
(CONTINUATION)									
S 7 0 1 1 M P 207005 - 003 REF L									
ASSEMBLY PARTS NUMBER									
19	20	21	22	23	24	25	26	27	28
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	WHOLE	DECIMAL	U.M.	CODE	REV
M P 123085 - 001	15	I.C. 74LS139	11G	1					
M P 123095 - 001	16	I.C. 74LS153	3E, 4E, 3F, 4F	4					
M P 123231 - 001	17	I.C. CD4502B	9B, 9C	2					
M P 123090 - 001	18	I.C. 74LS163	9D, 13D	2					
M P 123086 - 001	19	I.C. 74LS164	4D, 5E, 13K	3					
M P 123232 - 001	20	I.C. 74LS166	4C, 7E, 13G, 2H	4					
M P 123096 - 001	21	I.C. 74LS174	10C, 9E, 11H	3					
M P 123045 - 001	22	I.C. 74LS175	4H, 5H, 5K	3					
M P 123233 - 001	23	I.C. 74LS195	3G, 3H	2					
M P 123097 - 001	24	I.C. 74LS367	6G, 7G, 6H, 7H, 6K	5					
M P 123091 - 001	25	I.C. 74LS374	3C	1					
M P 123203 - 001	26	I.C. 74LS393	9G, 10G, 9H, 10K, 9K	5					
M P 123234 - 001	27	I.C. 74LS240	2B, 3B, 3K, 4K	4					
M P 100234 - 001	28	I.C. 9602	12B, 13B	2					
M P 123245 - 001	29	I.C. 9401	13A, 11E	2					
M P 100345 - 001	30	I.C. MC4044P	8E	1					
M P 123069 - 001	31	I.C. 74LS124	12A	1					
M P 123235 - 001	32	I.C. MC14040	13C, 6F, 8F	3					
M P 207029 - 001	33	ASSY. PROM 512 X 4 (READ SEQUENCER)	10B	1					

FORM 795 (R 03/82) (Continuation)

PAGE 2 OF 9

ASSEMBLY PARTS LIST									
(CONTINUATION)									
S 7 0 1 1 M P 207005 - 002 REF P									
ASSEMBLY PARTS NUMBER									
19	20	21	22	23	24	25	26	27	28
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	WHOLE	DECIMAL	U.M.	CODE	REV
M P -	119								
M P 123123 - 001	120	I.C. 74LS09	4G	1					
M P 123246 - 001	121	I.C. 74LS240	2K	1					
M P 123001 - 001	122	I.C. 7414	10H	1					
M P 123074 - 001	123	I.C. 74S32	12C	1					
M P -	124								
M P 100383 - 930	125	WIRE, JUMPER 30GA	90IPS (USE BARE WIRE)	1		.05			
M P 105008 - 006	126	CONN-PC, 50 PIN RIBBON	P4,5	4					
M P 101045 - 001	127	CABLE, FLAT		15			06		
M P 102669 - 221	128	CAP., CER. 100 WVDC $\pm 5\%$ 220Pf	C59	1					
M P -	129								
M P 207005 - 100	130	ASSY DWG CONTROLLER		0					
M P 207003 - 001	131	PRINTED MASTER		0					
M P -									
M P -									
M P -									
M P -									
M P -									

FORM 795 (R 03/82) (Continuation)

PAGE 7 OF 10

ASSEMBLY PARTS LIST									
(CONTINUATION)									
S 7 0 1 1 M P 207005 - 003 REF L									
ASSEMBLY PARTS NUMBER									
19	20	21	22	23	24	25	26	27	28
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	WHOLE	DECIMAL	U.M.	CODE	REV
M P 207026 - 001	34	ASSY. PROM 256 X 4 (WRITE SEQUENCER)	9F	1					
M P 207024 - 001	35	ASSY. PROM 32 X 8 (READ DECODER)	6E	1					
M P 123238 - 001	36	I.C. MM5257N-25	8G, 8H, 8K	3					
M P 125040 - 001	37	I.C. TL082P	11A	1					
M P 101022 - 001	38	I.C. LM311	2G	1					
M P 123036 - 001	39	I.C. 74LS74	11B, 6C, 12D, 12F 12G, 12H	6					
M P 100336 - 001	40	I.C. 7438	4B	1					
M P 207027 - 001	41	ASSY. PROM 256 X 4 (HOST SEQUENCER)	11K	1					
M P 207025 - 001	42	ASSY. PROM 32 X 8 (WRITE ENCODER)	13H	1					
M P 125006 - 005	43	I.C. UA7805UC	14G	1					
M P 123237 - 001	44	I.C. 74LS373	3D	1					
M P 123023 - 001	45	I.C. 74S74	7D, 6D, 7F	3					
M P 123028 - 001	46	I.C. 74S00	8C	1					
M P 123046 - 001	47	I.C. 74S04	7C	1					
M P 101031 - 001	48	I.C. 75452	6A	1					
M P 123119 - 001	49	I.C. 74S163	8D	1					
M P 123120 - 001	50	I.C. 74S174	8B	1					
M P 123152 - 001	51	I.C. 74LS273	2C	1					
M P 146014 - 016	52	SOCKET, DIP - 16 CONTACTS	1K, 6B	2					

FORM 795 (R 03/82) (Continuation)

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ASSEMBLY PARTS LIST									
(CONTINUATION)									
S 7 0 1 1 M P 207005 - 003 REF L									
ASSEMBLY PARTS NUMBER									
19	20	21	22	23	24	25	26	27	28
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	WHOLE	DECIMAL	U.M.	CODE	REV
M P 207005 - 200	1	SCHEMATIC		0					
M P 207011 - 002	2	ASSY, 8-BIT MICROCOMPUTER EXPANDER	2EF (207041-002 is Alternative)	1					
M P 207021 - 001	3	ASSY, POWER CABLE - CONTROL		1					
M P 207004 - 001	4	PROCESS BOARD		1					
M P 123029 - 001	5	I.C. 74LS00	7B, 11D	2					
M P 123149 - 001	6	I.C. 74LS01	13F	1					
M P 123031 - 001	7	I.C. 74LS04	10D, 12E, 12K	3					
M P 123032 - 001	8	I.C. 74LS08	5C, 5G	2					
M P 123034 - 001	9	I.C. 74LS11	10F	1					
M P 123047 - 001	10	I.C. 74LS14	5B	1					
M P 123035 - 001	11	I.C. 74LS32	5F, 11F	2					
M P 123093 - 001	12	I.C. 74LS51	7A	1					
M P 123084 - 001	13	I.C. 74LS109	13E	1					
M P 123100 - 001	14	I.C. 74LS138	11C, 5D, 10E	3					

FORM 795 (R 03/82)

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egraph
GRAPHIC SYSTEMS, INC.

ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207005 — 003

(CONTINUATION)

ASSEMBLY PART NUMBER

Garden Grove Division

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE	
						WHOLE 12	DECIMAL 10		
</									



ASSEMBLY PARTS LIST
(CONTINUATION)

S 7 0 1 1 M P 207005 — 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE			
						WHOLE	DECIMAL				
M P	100155 — 164		71	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 49.9	R53	1					
M P	101156 — 203		72	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 20K	R72	1					
M P	101156 — 562		73	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 5.6K	R4	1					
M P	101156 — 154		74	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 150K	R12	1					
M P	100155 — 232		75	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 225	R54	1					
M P	100155 — 414		76	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20K	R9, 10, 15, 16, 21, 50 68, 70	8					
M P	100155 — 385		77	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R18, 49, 69, 71	4					
M P	100155 — 443		78	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 40.2K	R17, 67	2					
M P	101156 — 271		79	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 270 OHMS	R63	1					
M P	100067 — 101		80	RESISTOR, $1\frac{1}{2}w$ $\pm 5\%$ 100	R48	1					
M P	138002 — 503		81	POTENTIOMETER $\frac{1}{2}w$, 50K	R11	1					
M P	138002 — 103		82	POTENTIOMETER $\frac{1}{2}w$, 10K	R25, R7	2					
M P	138002 — 503		83	POTENTIOMETER $\frac{1}{2}w$, 50K	R7						
M P	142032 — 002		84	TERMINATOR, 16 PIN, 180/390 OHM	1K	1					
M P	102768 — 225		85	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C15	1					
M P	102768 — 475		86	CAP., TANT. 10v $\pm 20\%$ 4.7uf	C20	1					
M P	102768 — 226		87	CAP., TANT. 10v $\pm 20\%$ 22uf	C16	1					
M P	102769 — 475		88	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C17, 21	2					
M P	102668 — 472		89	CAP., CER. 50v $\pm 5\%$ 4700pf NPO	C4	1					

FORM 795 (R 03/82) (Continuation)

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ASSEMBLY PARTS LIST
(CONTINUATION)

S 7 0 1 1 M P 207005 — 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE			
						WHOLE	DECIMAL				
M P	102665 — 104		90	CAP., CER. 50v $\pm 20\pm 80\%$ 0.10uf Z5U	C2, 3, 6, 7, 8, 24-50	32					
M P	102669 — 301		91	CAP., CER. 100v $\pm 5\%$ 300pf NPO	C9, 10, 60, 61, 63	5					
M P	102667 — 563		92	CAP., CER. 100v $\pm 10\%$.056uf X7R	C5	1					
M P	102669 — 150		93	CAP., CER. 100v $\pm 5\%$ 15pf NPO	C14	1					
M P	102669 — 330		94	CAP., CER. 100v $\pm 5\%$ 33pf NPO	C1	1					
M P	102669 — 911		95	CAP., CER. 100v $\pm 5\%$ 910pf NPO	C13	1					
M P	102668 — 122		96	CAP., CER. 50v $\pm 5\%$ 1200pf NPO	C19	1					
M P	102668 — 822		97	CAP., CER. 50v $\pm 5\%$ 8200pf NPO	C12	1					
M P	102666 — 479		98	CAP., CER. 50v $\pm 5\%$ 4.7pf	C51	1					
M P	102669 — 561		99	CAP., CER. 100v $\pm 5\%$ 560pf NPO	C52	1					
M P	151031 — 001		100	TRANSISTOR, PNP 2N3906	Q1	1					
M P	151030 — 001		101	TRANSISTOR, NPN 2N3904	Q2	1					
M P	104903 — 001		102	CLIP, JUMPER .025 SQ POST	TP17-18	1					
M P	207338 — 001		103	SHIELD, CABLE							
M P	105084 — 001		104	CONNECTOR-HOUSING, 4 PIN	J2	1					
M P	106019 — 001		105	CONTACT, PIN	J2	4					
M P	100171 — 002		106	TY-RAP 1/16 -1%	J2	1					
M P	150107 — 001		107	TAPE, DOUBLE COATED POLYURETHANE FOAM	14G			5	06		
M P	100360 — 001		108	PIN, WIRE WRAP, .025 SQ	TP1-18	18					

FORM 795 (R 03/82) (Continuation)

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ASSEMBLY PARTS LIST
(CONTINUATION)

S 7 0 1 1 M P 207005 — 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE			
						WHOLE	DECIMAL				
	147805 - 001		109	SUPPORT, CIRCUIT BOARD		5					
M P	100171 — 001		110	TY-RAP 1/16 to 5/8		3					
M P	102668 — 272		111	CAP., CER. 50v $\pm 5\%$ 2700pf NPO	C11	1					
M P	102664 — 103		112	CAP., CER. 50v $\pm 20\%$ $\pm 80\%$ 0.01uf Z5U	C53-C57	5					
M P	102667 — 102		113	CAP., CER. 100 WVDC $\pm 10\%$ 1000 pf	C62	1					
M P	—		114								
M P	101156 — 682		115	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 6.8K	R83	1					
M P	101156 — 331		116	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 330	R84	1					
M P	101156 — 221		117	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 220	R85	1					
M P	104804 — 001		118	CLAMP, CABLE		1					
M P	—		119								
M P	123123 — 001		120	I.C. 74LS09	4G	1					
M P	123246 — 001		121	I.C. 74LS240	2K	1					
M P	123001 — 001		122	I.C. 7414	10H	1					
M P	123074 — 001		123	I.C. 74S32	12C	1					
M P	105008 — 006		126	CONN-PC, 50 PIN RIBBON	P4,5	4					
M P	101045 — 001		127	CABLE, FLAT		15			06		
M P	102669 — 221		128	CAP., CER. 100WVDC $\pm 5\%$ 220PF	C59	1					
M P	207005 — 100		130	ASSY DWG CONTROLLER		0					
M P	207003 — 001		131	PRINTED MASTER		0					

FORM 795 (R 03/82) (Continuation)

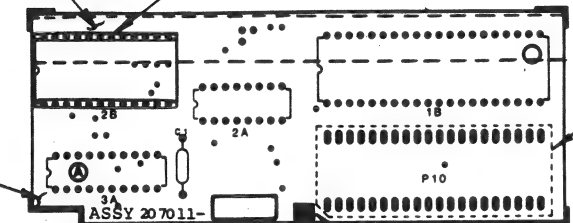
PAGE 7 OF 9

REVISION		207011-100	1
LTR	DESCRIPTION	DWN	DATE
A	ENG REL	LS	1/14/82
O1	PIL REL ERO 820309	BB	8/1/82
O1	ECO 12121	BB	8/1/82
O1	ECO 12442	CM	8/1/82
O13	ECO 12505	JAX	9/21/82
A	PROD REL PER ERO 820424	RCB	1/27/83

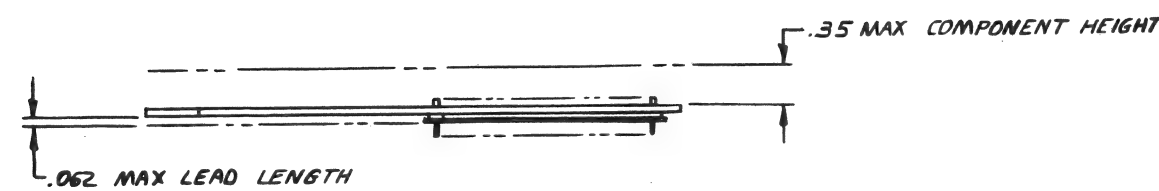
INSTALL 4" LONG PIECE OF ITEM 10 (TAPE) TO UNDERSIDE OF PWB AFTER FLOW SOLDERING AND CLEANING.

INSTALL COMPONENT 2B (ITEM 9) IN SOCKET X2B AFTER FLOW SOLDERING AND CLEANING.

PWB-MICROCOMPUTER EXPANDER



CONNECTOR-P10 (INSTALL FROM FAR SIDE AFTER FLOW SOLDERING)



207011-100
REV A

D & D MGR	1/29/82
ME MGR	2-10-82
DOC MGR	1-27-82
UL/CSA	2/1/82
FACR NO.	NONE

PART NUMBER: SEE SEPARATE M/L. Q-120

APPROVAL	DATE	DWN L. SCHOTT	1/14/82	
MECH	2-1/82	CHK	2/5/82	
ELEC	1/14/82	TITLE	PWB ASSY-MICROCOMPUTER EXPANDER	
MFG	2/1/82	CODE IDENT	32274	REV A
MATL	2/1/82	SIZE	C	DWG NO 207011-100
QA B. Deas	1/27/82	MOD	40049-001	SH 1 OF 1
MKTG	1/27/82	SCALE	1-1	
ISSUED	1/1/82	ARCH. #/L 20077-007 1 160601-009 Ce		

2. FOR SCHEMATIC REFERENCE SEE, DWG. 207011-200.

STAMP REVISION LETTER USING A PERMANENT AND LEGIBLE MARKING METHOD.

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ASSEMBLY PARTS LIST

S 7 0 1 1 207011 - 001 C

ASSEMBLY TITLE: ASSY, PWB - MICROCOMPUTER EXPANDER DSC: R DOC CODE: Q 120

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
					WHOLE	DECIMAL			
	207011 - 200	1	SCHEMATIC		0				
	207010 - 001	2	PROCESS BOARD		1				
	123192 - 001	3	I.C. P8035	1B	1				
	123045 - 001	4	I.C. 74LS175PCB	2A	1				
	123237 - 001	5	I.C. SN74LS373N	3A	1				
	102665 - 104	6	CAP., CER. 50v -20+80% 0.1uf	C1	1				
	137905 - 040	7	CONNECTOR - DIP PLUG	P10	1				
	146014 - 024	8	SOCKET - DIP, 24 CONTACTS	X2B	1				
	207028 - 001	9	ASSY, PROM 2K X 8	2B	1				
	150107 - 002	10	TAPE, URETHANE FOAM	1/16 x 3/8	4		06		
	-								
	207009 - 001								
	207009 - 001	13	PRINTED MASTER		0				
	207011 - 100	14	ASSY DWG		0				
PREPARED BY	Sue Redmond	DATE	1-14-82		DWG REL NO.	DATE			
CHECKED BY	H. P. 1/28/82		1-26-82		820287	21	1	82	
DESIGN ENGINEER	H. P. 1/28/82		1-28-82		NEXT ASSEMBLY				
					207005-001				
					MODEL NO.				
					F420-30/90				
REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE				

FORM 796 (R 06/80)

PAGE 1 OF 2



ASSEMBLY PARTS LIST

Garden Grove Division DSC: R S 7 0 1 1 207011 - 002 B

ASSEMBLY TITLE: ASSY, PWB - MICROCOMPUTER EXPANDER DOC CODE: Q120

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
					WHOLE	DECIMAL			
	207011 - 200	1	SCHEMATIC		0				
	207010 - 001	2	PROCESS BOARD		1				
	123192 - 001	3	I.C. P8035	1B	1				
	123045 - 001	4	I.C. 74LS175PCB	2A	1				
	123237 - 001	5	I.C. SN74LS373N	3A	1				
	102665 - 104	6	CAP., CER. 50v -20+80% 0.1uf	C1	1				
	137905 - 040	7	CONNECTOR - DIP PLUG	P10	1				
	146014 - 024	8	SOCKET - DIP, 24 CONTACTS	X2B	1				
	207028 - 002	9	ASSY, PROM 2K X 8	2B	1				
	150107 - 002	10	TAPE, URETHANE FOAM	1/16 X 3/8	4		06		
	-								
	-								
	207009 - 001	13	PRINTED MASTER		0				
	207011 - 100	14	ASSY DWG		0				
PREPARED BY	S. HENCKE	DATE	01-17-83		DWG REL NO.	DATE			
CHECKED BY	S. H. 1/17/83		1/17/83		820455	01	17	83	
DESIGN ENGINEER	R. P. 1/17/83		1/17/83		NEXT ASSEMBLY				
					207005-003				
					MODEL NO.				
					F420-30/90				
REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE				

FORM 796 (R 03/82)

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4

3

2

1

REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG. REL	LVS	9-25-81	CK 143-81
01	PIL REL ERO 820309	KAM	3/5/82	
02	ECO 12179	Hs	KAM	4/27/82 A. Panta
03	ECO 12243	JAZ	KAM	5/28/82 J. Panta
04	ECO 12461	KW	KAM	9/1/82 J. Panta

(2) PWB

(14) HEADER

CUT OFF OR REMOVE
PIN 3 (KEY POSITION)(16) 7 PLACES
TYP.(15) TY-RAP
(2PLCS)

(17) CABLE ASSY

7 +24V
6 24VRET
5 KEY
4 +5V
3 5VRET
2 FWD
1 REV

OBSOLETE
~~SUPERSEDED BY 207069-100~~
PER ECO 12461 9-1-82

HISTORICAL RECORD
DO NOT DESTROY

D & D MGR	11/12/81
ME MGR	11/12/81
DOC MGR	11/12/81
UL/CSA	11/1/81

PART NO. SEE
SEPARATE M/L

Q-120

STAMP REVISION LETTER USING A PERMANENT
AND LEGIBLE MARKING METHOD.

1. FOR SCHEMATIC REFERENCE SEE DWG 207017-200.

NOTES: UNLESS OTHERWISE SPECIFIED

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DSC: 7

UNLESS OTHERWISE
SPECIFIED DIMENSIONS
ARE IN INCHES
TOLERANCES ARE
DECIMALS
.X±
.XX±
.XXX±
ANGLES±
DO NOT SCALE
DRAWING

APPROVAL	DATE	DWN L. SCHOTT	9/29/81	cipher circuit products, inc.	SAN DIEGO CALIF	
MECH	11-12-81	CHK	2/1/82			
ELEC	11/12/81	TITLE				
MFG	3/2/82	ASSY PWB				
MATL	11/12/81	MOTOR DRIVER				
QA	11/12/81	CODE IDENT	SIZE	DWG NO	REV	
MKTG	11/12/81	32274	C	207017-100	0-	
ISSUED	11/12/81	SCALE	2:1	MOD	40011-001	
		SH	1	OF	1	

4

3

2

1



ASSEMBLY PARTS LIST

5	52	61
S 7 0 1 1	207017 - 001	04
ASSEMBLY PARTS NUMBER.		

ASSEMBLY TITLE		ASSY. PWB - MOTOR DRIVER		DSC:4		DOC NO		DOC DATE	
								Q 120	
19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE	
						WHOLE	DECIMAL		
	207017 - 200		1	SCHEMATIC	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> HISTORICAL RECORD DO NOT DESTROY </div>		0		
	207016 - 001		2	PROCESS BOARD			1		
	123244 - 001		3	PHOTOTRANSISTOR 4N28	1A, 2A, 3A, 4A		4		
	123236 - 101		4	I.C. 7438	5A		1		
	151027 - 002		5	TRANSISTOR, NPN T1P120	Q2, Q4		2		
	151028 - 002		6	TRANSISTOR, PNP T1P125	Q1, Q3		2		
	101156 - 750		7	RESISTOR, 1/4w +5% 75	R1, R3, R5, R7		4		
	101156 - 222		8	RESISTOR, 1/4w +5% 2.2K	R9, R10, R11, R12		4		
	101156 - 682		9	RESISTOR, 1/4w +5% 6.8K	R2, R4, R6, R8		4		
	102608 - 108		10	CAP., ELEC. 35v -10%+50% 1000uf	C3		1		
	102665 - 104		11	CAP., CER. 50v -20+80% .1uf	C1, C2, C4		3		
	-		12						
	122522 - 001		13	INDUCTOR- 100uh 10%	L1		1		
	120915 - 003		14	HEADER, RIGHT ANGLE	J8		1		
PREPARED BY	Sue Redmond	DATE	2-9-82					DWG REL NO.	DATE
CHECKED BY	<i>[Signature]</i>		2-9-82	04 12461	2-9-82 <i>[Signature]</i>			820294	2 10 82
DESIGN ENGINEER	<i>[Signature]</i>		2-9-82	03 12243	6-20-82 <i>[Signature]</i>				
				02 12179	4-27-82 <i>[Signature]</i>				
				01 P11 Re					
		REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE		
								NEXT ASSEMBLY	
								207358, 207359	
								MODEL NO.	
								F/0420-30/90	

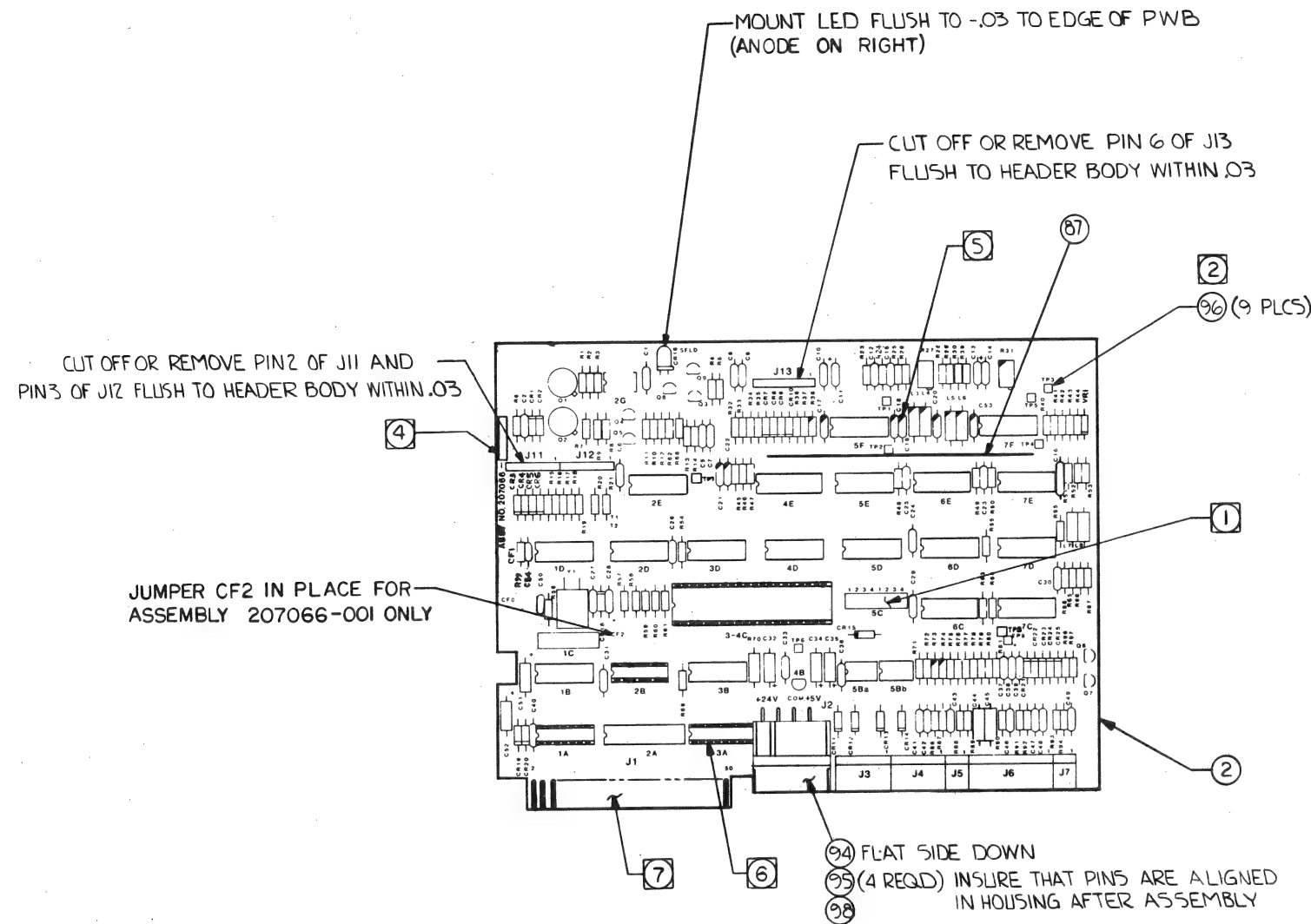


ASSEMBLY PARTS LIST

1	5	52	61
S 7 0 1 1	M P	207017 - 001	REV 04
ASSEMBLY PARTS NUMBER			

[illegible]

REVISIONS					207066-100B	
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
01	PILOT REL PER ERO B20372 W	KAM				
02	ECO 12436/A JAZ	KAM				
A	PROD. REL ERO B20421/A	KAM				
B	ECO 12642					



- 7 MASK CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- 3 INSTALL COMPONENTS 1A, 3A, 2B, 3C-4C IN SOCKETS AFTER FLOW SOLDERING AND CLEANING
- 2 COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSEMBLY VERSION
- 4 MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 CHARACTERS PER CIPHER DATA SPEC 100037-001
3. REFERENCE SCHEMATIC DIAGRAM 207066-200
- 2 PRESS TEST POINT PIN INTO PWB PRIOR TO FLOW SOLDERING
- 1 INSTALL ITEM 97, JUMPER CLIPS ON PIN SETS 1 OF HEADER 5C

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED		DRAWN D. WILSON 3-5-82				THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER. NO PART, WHOLE OR IN PART, BE LOANED, REPRODUCED, COPIED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	
1. TOLERANCES .XX± ANGULAR ± .XXX± 2. BREAK ALL SHARP EDGES APPROX .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK <i>Markham</i> 6/7/82 APPR. <i>H. Fields</i> 6/9/82 MATERIAL FINISH MODEL No. 0420-30/90 NEXT ASSY					
DSC:R		SCALE 1:1		SIZE D		207066-100	
DO NOT SCALE THIS DRAWING		CODE IDENT 52465		SHEET 1 OF 1			



5 52 81
S 7 0 1 1 207066 -001 REV F
ADDRESS IN BASTO SILLABES

ASSEMBLY TITLE		ASSY. PWB - MAIN - 30 IPS		DSC: R		DOC CODE Q 120	
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY WHOLE DECIMAL		U.M. CODE
19		20					
	207066 - 200	1	SCHEMATIC		0		
	207065 - 001	2	PROCESS BOARD		1		
	207030 - 001	3	ASSY. PROM 8 BIT MICROCOMPUTER	3-4C	1		
	123029 - 001	4	I.C. 74LS00	6E	1		
	123030 - 001	5	I.C. 74LS02	4D	1		
	123031 - 001	6	I.C. 74LS04	1B, 3B, 1D, 5D	4		
	123123 - 001	7	I.C. 74LS09	2D	1		
	123036 - 001	8	I.C. 74LS74	3D, 6D, 5E	3		
	123038 - 001	9	I.C. 74LS86	7C	1		
	123234 - 001	10	I.C. 74S240	2A	1		
	101139 - 001	11	I.C. 75451	2G	1		
	101031 - 001	12	I.C. 75452	5Ba, 5Bb	2		
	100331 - 001	13	I.C. 7406	7D	1		
	100234 - 001	14	I.C. 9602	4E	1		
PREPARED BY	Sue Redmond	DATE	3-5-82	A PROD. REL. DATE	12/7/81	DWG. REL. NO.	DATE
CHECKED BY	Kan Mikhaylov	3/12/82	04 12521	F 12771	12/7/81	820318	03 12 82
DESIGN ENGINEER			03 12436	E 12728	12/7/81	NEXT ASSEMBLY	
			02 12263	D 12642	12/7/81	M M D D Y Y	
			01 PL REL	C 12630	12/7/81	207359	
			REV ECO	B 12631	12/7/81	MODEL NO.	
			DATE / SIGNATURE	DATE / SIGNATURE	DATE / SIGNATURE	0420-30	

FORM 795 (R 02/80)

PAGE 1 OF 7



S 7 0 1 1	M P	207066 — 001	REV F
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ASSEMBLY PARTS NUMBER

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	20				WHOLE 12	DECIMAL 16	
M P	100155 - 347	57	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.02K	R40,44	2		
M P	100155 - 351	58	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.42K	R32,33	2		
M P	100155 - 385	59	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R25,26,36,37,52	5		
M P	100155 - 415	60	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20.5K	R53,95	2		
M P	100064 - 620	61	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 62	R70	1		
M P	142027 - 001	62	TERMINATOR - 14 PIN 180/390 OHM	1A	1		
M P	142032 - 002	63	TERMINATOR - 16 PIN 180/390 OHM	3A	1		
M P	138002 - 104	64	POTENTIOMETER $\frac{1}{2}w$ 100K	R27	1		
M P	138002 - 202	65	POTENTIOMETER $\frac{1}{2}w$ 2K	R31	1		
M P	102768 - 225	66	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C28,38	2		
M P	102871 - 225	67	CAP., TANT. 20v $\pm 20\%$ 2.2uf	C34	1		
M P	102769 - 475	68	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C32	1		
M P	102870 - 685	69	CAP., TANT. 4v $\pm 20\%$ 6.8uf	C11,13	2		
M P	102768 - 226	70	CAP., TANT. 10v $\pm 20\%$ 22uf	C35,51,52	3		
M P	102667 - 472	71	CAP., CER. 100v $\pm 10\%$.0047uf	C37, 54	2		
M P	102667 - 102	72	CAP., CER. 100v $\pm 10\%$.001uf	C43,46-49	5		
M P	102665 - 104	73	CAP., CER. 50v -20+80% .1 uf	C1,5,7-10,12,14,15, 23-27,29-31,33,36, C39-42	23		
M P	-						
M P	102667 - 104	74	CAP., CER. 100v $\pm 10\%$.1uf	C44,45	2		
M P	102673 - 479	75	CAP., CER. 100v $\pm 10\%$ 4.7pf	C50	1		
M P	102669 - 200	76	CAP., CER. 100v $\pm 5\%$ 20pf	C2	1		

FORM 705B (R 09/24)

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S 7 0 1 1	M P	207066	— 001	REV F
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ASSEMBLY PARTS NUMBER

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
M P	123239 -001	15	I.C. LM319	7E	1		
M P	125011 -001	16	I.C. LM339	6C	1		
M P	125017 -015	17	I.C. MA78L15	4B	1		
	101032 -001	18	I.C. NE592	5F, 7F	2		
	146014 -014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2		
M P	146014 -016	20	SOCKET, DIP - 16 CONTACTS	3A	1		
M P	146014 -040	21	SOCKET, DIP - 40 CONTACTS	3-4C	1		
M P	120909 -003	22	HEADER, PROGRAM - DIP	2B	1		
M P	151032 -001	23	TRANSISTOR PNP Q2T2905	2E	1		
M P	151030 -001	24	TRANSISTOR NPN 2N3904	Q3-7	5		
M P	151033 -001	25	TRANSISTOR NPN MM3007	Q1,2	2		
M P	107029 -001	26	DIODE 1N4001	CR15	1		
M P	107201 -001	27	DIODE 1N4150	CR1-14, CR18-25	22		
M P	107005 -001	28	LED, INDICATOR MV5054-2	CR16	1		
	106500 -114	29	CRYSTAL - 3.579545 MHZ	Y1	1		
	101156 -100	30	RESISTOR, $\frac{1}{4}W$ +5% 10	R23,24	2		
	101156 -330	31	RESISTOR, $\frac{1}{4}W$ +5% 33	R48	1		
	100155 -164	32	RESISTOR, $\frac{1}{4}W$ +5% 49.9	R4	1		
	101156 -121	33	RESISTOR, $\frac{1}{4}W$ +5% 120	R2,3	2		
	101156 -161	34	RESISTOR, $\frac{1}{4}W$ +5% 160	R90	1		
M P	101156 -221	35	RESISTOR, $\frac{1}{4}W$ +5% 220	R54	1		

FORM 7950 (09/00)

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S 7 0 1 1	M P	207066 - 001	REV F
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ASSEMBLY PARTS NUMBER

PART NUMBER			ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	20	21				WHOLE	DECIMAL	
M P	102669	- 330	77	CAP., CER. 100v <u>+5%</u> 33pf	C16		1	
M P	102669	- 620	78	CAP., CER. 100v <u>+5%</u> 62pf	C53		1	
M P	102669	- 101	79	CAP., CER. 100v <u>+5%</u> 100pf	C22		1	
M P	102669	- 131	80	CAP., CER. 100v <u>+5%</u> 130pf	C21		1	
M P	102669	- 301	81	CAP., CER. 100v <u>+5%</u> 300pf	C20		1	
M P	102669	- 122	82	CAP., CER. 100v <u>+5%</u> 1200pf	C18,19		2	
M P	102669	- 302	83	CAP., CER. 100v <u>+5%</u> 3000pf	C17		1	
M P	122502	- 001	84	INDUCTOR, 10uh <u>+5%</u> 290ma	L7,8		2	
M P	122502	- 010	85	INDUCTOR, 820uh <u>+5%</u> 77ma	L3,4		2	
M P	122502	- 009	86	INDUCTOR, 360uh <u>+5%</u> 108ma	L5,6		2	
M P	102002	- 001	87	BUS BAR - VERTICAL			1	
M P	100143	- 002	88	PAD, TRANSISTOR TO-5	Use with Q1, Q2		2	
M P	120905	- 011	89	HEADER, DOUBLE ROW, STRAIGHT	5C		1	
M P	120916	- 001	90	HEADER, RIGHT ANGLE	J13		1	
M P	120916	- 002	91	HEADER, RIGHT ANGLE	J11,12		1	
M P	120915	- 024	92	HEADER, RIGHT ANGLE	J4-7		1	
M P	120915	- 007	93	HEADER, RIGHT ANGLE	J3		1	
M P	105084	- 001	94	CONNECTOR-HOUSING, 4 POS.	J2		1	
M P	106019	- 001	95	CONTACT-PIN	J2		4	
M P	100360	- 004	96	PIN, WIRE WRAP .025 SQ.	TP1-9, CF-0		11	
M P	104903	- 001	97	CLIP, JUMPER .025 SQ. POST	5C		2	

FORM 756B (R 09/80)

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S 7 0 1 1	M P	207066	- 001	REV. F
ASSEMBLY PARTS NUMBER				

19	PART NUMBER	ITEM NO. 20	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE			
					WHOLE 12	DECIMAL 10				
	101156 - 471	36	RESISTOR, $\frac{1}{4}W$ +5% 470	R56,99	2					
	101156 - 511	37	RESISTOR, $\frac{1}{4}W$ +5% 510	R34,35,49,50,51	5					
	101156 - 681	38	RESISTOR, $\frac{1}{4}W$ +5% 680	R7,10,58,61	4					
	101156 - 102	39	RESISTOR, $\frac{1}{4}W$ +5% 1K	R13,16,18,38,41,42, 47,55,87,89	10					
	101156 - 122	40	RESISTOR, $\frac{1}{4}W$ +5% 1.2K	R80	1					
	101156 - 152	41	RESISTOR, $\frac{1}{4}W$ +5% 1.5K	R69	1					
	101156 - 272	42	RESISTOR, $\frac{1}{4}W$ +5% 2.7K	R97	1					
	101156 - 332	43	RESISTOR, $\frac{1}{4}W$ +5% 3.3K	R73,74	2					
	101156 - 392	44	RESISTOR, $\frac{1}{4}W$ +5% 3.9K	R98	1					
	101156 - 472	45	RESISTOR, $\frac{1}{4}W$ +5% 4.7K	R57,59,60,79,81	5					
	101156 - 682	46	RESISTOR, $\frac{1}{4}W$ +5% 6.8K	R14,15,17,19,20	5					
	101156 - 103	47	RESISTOR, $\frac{1}{4}W$ +5% 10K	R64,65,67,71,75,76,78, 86,88,92,93,96	12					
	101156 - 203	48	RESISTOR, $\frac{1}{4}W$ +5% 20K	R43	1					
	101156 - 303	49	RESISTOR, $\frac{1}{4}W$ +5% 30K	R46	1					
	101156 - 333	50	RESISTOR, $\frac{1}{4}W$ +5% 33K	R28,30	2					
	101156 - 473	51	RESISTOR, $\frac{1}{4}W$ +5% 47K	R91,94	2					
	101156 - 104	52	RESISTOR, $\frac{1}{4}W$ +5% 100K	R63,66,72,77	4					
	100155 - 181	53	RESISTOR, $\frac{1}{4}W$ +1% 75	R1	1					
	100155 - 232	54	RESISTOR, $\frac{1}{4}W$ +1% 255	R5	1					
	100155 - 254	55	RESISTOR, $\frac{1}{4}W$ +1% 432	R8	1					
	100155 - 289	56	RESISTOR, $\frac{1}{4}W$ +1% 1K	R29,39	2					

1001

A horizontal number line with arrows at both ends. It has tick marks labeled 2 and 7.



S 7 0 1 1	M P	207066 - 001	REV F
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ASSEMBLY PART NUMBER

[illegible]

FCIM 7950 (B 09/80)

ASSEMBLY TITLE				ASSY. PWB - MAIN - 30 IPS				DOC CODE				DSC : R				Q120			
19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY			U.M. CODE										
						WHOLE	DECIMAL												
	207066	-	200	1	SCHEMATIC				0										
	207065	-	001	2	PROCESS BOARD				1										
	207030	-	001	3	ASSY. PROM - 8 BIT MICROCOMPUTER	3-4C			1										
	123029	-	001	4	I.C. 74LS00	6E			1										
	123030	-	001	5	I.C. 74LS02	4D			1										
	123031	-	001	6	I.C. 74LS04	1B, 3B, 1D, 5D			4										
	123123	-	001	7	I.C. 74LS09	2D			1										
	123036	-	001	8	I.C. 74LS74	3D, 6D, 5E			3										
	123038	-	001	9	I.C. 74LS86	7C			1										
	123234	-	001	10	I.C. 74S240	2A			1										
	101139	-	001	11	I.C. 75451	2G			1										
	101031	-	001	12	I.C. 75452	5Ba, 5Bb			2										
	100331	-	001	13	I.C. 7406	7D			1										
	100234	-	001	14	I.C. 9602	4E			1										
PREPARED	Sue Redmond	DATE	3-5-82	A	PROD. REL. 12/20/82	F	12771A	2/2/83	DWG REL NO.	DATE									
CHECKED	By K. M. Mahdawi	3/12/82	04125215	10/6/82	E	12728	5/6/83	820318	031282										
DESIGN	ENGINEER		0312436A	8/31/82	D	12642	2/6/83	REXY ASSEMBLY											
			0212263	4/4/83	C	12636	2/7/83	207358											
			0112176	3/1/83	B	12631	2/6/83	MODEL NO.											
			REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE	0420-90										

FORM 795 (R 09/90)

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.	CODE			
						WHOLE 17	DECIMAL 18					
	100155	- 347	57	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.02K	R40,44	2						
	100155	- 351	58	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.42K	R32,33	2						
	100155	- 385	59	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R25,26,36,37,52	5						
	100155	- 415	60	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20.5K	R53,95	2						
	100064	- 620	61	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 62	R70	1						
	142027	- 001	62	TERMINATOR-14 PIN 180/390 OHM	1A	1						
	142032	- 002	63	TERMINATOR-16 PIN 180/390 OHM	3A	1						
	138002	- 104	64	POTENTIOMETER $\frac{1}{2}w$, 100K	R27	1						
	138002	- 502	65	POTENTIOMETER $\frac{1}{2}w$, 5K	R31	1						
	102768	- 225	66	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C28,38	2						
	102871	- 225	67	CAP., TANT. 20v $\pm 20\%$ 2.2uf	C34	1						
	102769	- 475	68	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C32	1						
	102870	- 685	69	CAP., TANT. 4v $\pm 20\%$ 6.8uf	C11,13	2						
	102768	- 226	70	CAP., TANT. 10v $\pm 20\%$ 22uf	C35,51,52	3						
	102667	- 472	71	CAP., CER. 100v $\pm 10\%$.0047uf	C37, 54	2						
	102667	- 102	72	CAP., CER. 100v $\pm 10\%$.001uf	C43,46-49	5						
	102665	- 104	73	CAP., CER. 50v -20+80% .1uf	C1,5,7-10,12,14,15, 23-27,29-31,33,36	23						
	-				C39-42							
	102667	- 104	74	CAP., CER. 100v $\pm 10\%$.1uf	C44,45	2						
	102673	- 479	75	CAP., CER. 100v $\pm 10\%$ 4.7pf	C50	1						
	102669	- 200	76	CAP., CER. 100v $\pm 5\%$ 20pf	C2,C53	2						

FORM 7958 (R 06/80)

PART NUMBER			ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
18	28					WHOLE 12	DECIMAL 18	
MP	123239	- 001	15	I.C. LM319	7E	1		
MP	125011	- 001	16	I.C. LM339	6C	1		
MP	125017	- 015	17	I.C. MA78L15	4B	1		
MP	101032	- 001	18	I.C. NE592	5F, 7F	2		
MP	146014	- 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2		
MP	146014	- 016	20	SOCKET, DIP - 16 CONTACTS	3A	1		
MP	146014	- 040	21	SOCKET, DIP - 40 CONTACTS	3-4C	1		
MP	120909	- 003	22	HEADER, PROGRAM - DIP	2B	1		
MP	151032	- 001	23	TRANSISTOR, PNP Q2T2905	2E	1		
MP	151030	- 001	24	TRANSISTOR, NPN 2N3904	Q3-7	5		
MP	151033	- 001	25	TRANSISTOR, NPN MM3007	Q1, 2	2		
MP	107029	- 001	26	DIODE 1N4001	CR15	1		
MP	107201	- 001	27	DIODE 1N4150	CR1-14, CR18-25	22		
MP	107005	- 001	28	LED, INDICATOR MV5054-2	CR16	1		
MP	106500	- 114	29	CRYSTAL - 3.579545 MHz	Y1	1		
MP	101156	- 100	30	RESISTOR, $\frac{1}{4}W$ +5% 10	R23, 24	2		
MP	101156	- 330	31	RESISTOR, $\frac{1}{4}W$ +5% 33	R48	1		
MP	100155	- 164	32	RESISTOR, $\frac{1}{4}W$ +5% 49.9	R4	1		
MP	101156	- 121	33	RESISTOR, $\frac{1}{4}W$ +5% 120	R2, 3	2		
MP	101156	- 161	34	RESISTOR, $\frac{1}{4}W$ +5% 160	R90	1		
MP	101156	- 221	35	RESISTOR, $\frac{1}{4}W$ +5% 220	R54	1		

FORM 796B (R 09/80)

	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
					WHOLE	DECIMAL			
M P	102669 - 330	77	CAP., CER. 100v +5% 33pf	C16,21,22	3				
M P	102669 - 101	81	CAP., CER. 100v +5% 100pf	C20	1				
M P	102669 - 391	82	CAP., CER. 100v +5% 390pf	C18,19	2				
M P	102669 - 301	83	CAP., CER. 100v +5% 300pf	C17	1				
M P	122502 - 001	84	INDUCTOR 10uh +5% 290ma	L7,8	2				
M P	122502 - 008	85	INDUCTOR 270uh ±5% 129ma	L3,4	2				
M P	122502 - 004	86	INDUCTOR 120uh +5% 124ma	L5,6	2				
M P	102002 - 001	87	BUS BAR - VERTICAL		1				
M P	100143 - 002	88	PAD, TRANSISTOR TO-5	Use with Q1, Q2	2				
M P	120905 - 011	89	HEADER, DOUBLE ROW, STRAIGHT	5C	1				
M P	120916 - 001	90	HEADER, RIGHT ANGLE	J13	1				
M P	120916 - 002	91	HEADER, RIGHT ANGLE	J11,12	1				
M P	120915 - 024	92	HEADER, RIGHT ANGLE	J4-7	1				
M P	120915 - 007	93	HEADER, RIGHT ANGLE	J3	1				
M P	105084 - 001	94	CONNECTOR-HOUSING, 4 PIN	J2	1				
M P	106019 - 001	95	CONTACT, PIN	J2	4				
M P	100360- - 004	96	PIN, WIRE WRAP .025 SQ.	TP1-9, CF-0	11				
M P	104903 - 001	97	CLIP, JUMPER .025 SQ. POST	5C	2				
M P	100171 - 001	98	TY-RAP 1/16-1k	J2	1				
M P	101058 - 024	99	DIODE ZENER 1N5225B	VR1	1				
M P	-	100							

FORM 785B (R 08/80)


PART NUMBER			ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE
19	20					WHOLE 12	DECIMAL 18
M.P.	101156	- 471	36	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 470	R56, 99	2	
M.P.	101156	- 511	37	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 510	R34, 35, 49, 50, 51	5	
M.P.	101156	- 681	38	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 680	R7, 10, 58, 61	4	
M.P.	101156	- 102	39	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 1K	R13, 16, 18, 41, 42, 47, 55, 73, 74, 87, 89	11	
M.P.	101156	- 122	40	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 1.2K	R80	1	
M.P.	101156	- 152	41	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 1.5K	R69	1	
M.P.	101156	- 272	42	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 2.7K	R97	1	
M.P.	101156	- 302	43	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 3K	R38	1	
M.P.	101156	- 392	44	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 3.9K	R98	1	
M.P.	101156	- 472	45	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 4.7K	R57, 59, 60, 79, 81	5	
M.P.	101156	- 682	46	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 6.8K	R14, 15, 17, 19, 20	5	
M.P.	101156	- 103	47	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 10K	R64, 65, 67, 71, 75, 76, 78, 86, 88, 92, 93, 96	12	
M.P.	101156	- 203	48	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 20K	R43	1	
M.P.	101156	- 303	49	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 30K	R46	1	
M.P.	101156	- 333	50	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 33K	R28, 30	2	
M.P.	101156	- 473	51	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 47K	R91, 94	2	
M.P.	101156	- 104	52	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 100K	R63, 66, 72, 77	4	
M.P.	100155	- 181	53	RESISTOR, $\frac{1}{4}W$ $\pm 1\%$ 75	R1	1	
M.P.	100155	- 232	54	RESISTOR, $\frac{1}{4}W$ $\pm 1\%$ 255	R5	1	
M.P.	100155	- 254	55	RESISTOR, $\frac{1}{4}W$ $\pm 1\%$ 432	R8	1	
M.P.	100155	- 289	56	RESISTOR, $\frac{1}{4}W$ $\pm 1\%$ 1K	R29, 39	2	

FORM 795B (R 09/80)

[illegible]

FORM 785B (R 09/80)

[illegible]



Garden Grove Division

ASSEMBLY PARTS LIST

(CONTINUATION)


S 7 0 1 1	207066	— 003	REV G
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ASSEMBLY PART NUMBER

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE	01	REV
						WHOLE	DECIMAL			
19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	12	13	14	15	16
	123239 — 001	15	I.C. LM319	7E		1				
	125011 — 001	16	I.C. LM339	6C		1				
	125017 — 015	17	I.C. MA78L15	4B		1				
	101032 — 001	18	I.C. NE592	5F, 7F		2				
	146014 — 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A		2				
	146014 — 016	20	SOCKET, DIP - 16 CONTACTS	3A		1				
	146014 — 040	21	SOCKET, DIP - 40 CONTACTS	3-4C		1				
	120909 — 003	22	HEADER, PROGRAM - DIP	2B		1				
	151032 — 001	23	TRANSISTOR PNP Q2T2905	2E		1				
	151030 — 001	24	TRANSISTOR NPN 2N3904	Q3-7		5				
	151033 — 001	25	TRANSISTOR NPN MM3007	Q1,2		2				
	107029 — 001	26	DIODE 1N4001	CR15		1				
	107021 — 001	27	DIODE 1N4150	CR1-14, CR18-25		22				
	107005 — 001	28	LED, INDICATOR MV5054-2	CR16		1				
	106500 — 114	29	CRYSTAL - 3.579545 Mhz	Y1		1				
	101156 — 100	30	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 10	R23,24		2				
	101156 — 330	31	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 33	R48		1				
	100155 — 164	32	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 49.9	R4		1				
	101156 — 121	33	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 120	R2,3		2				

FORM 786 (R 03/82) (Continuation)

PAGE 2 OF 7

		ASSEMBLY PARTS LIST (CONTINUATION)		S 7 0 1 1	207066 — 003	REV G	
Gander Gravo Division				ASSEMBLY PART NUMBER			
19	PART NUMBER	28 ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					12 WHOLE	13 DECIMAL	
	101156 — 161	34	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 160	R90	1		
	101156 — 221	35	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 220	R54	1		
	101156 — 471	36	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 470	R56,99	2		
	101156 — 511	37	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 510	R34,35,49,50,51	5		
	101156 — 681	38	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 680	R7,10,58,61	4		
	101156 — 102	39	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 1K	R13,16,18,38,41,42, 47,55,87,89	10		
	101156 — 122	40	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 1.2K	R80	1		
	101156 — 152	41	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 1.5K	R69	1		
	101156 — 272	42	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 2.7K	R97	1		
	101156 — 332	43	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 3.3K	R73,74	2		
	101156 — 392	44	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 3.9K	R98	1		
	101156 — 472	45	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 4.7K	R57,59,60,79,81	5		
	101156 — 682	46	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 6.8K	R14,15,17,19,20	5		
	101156 — 103	47	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 10K	R64,65,67,71,75,76,78, 86,88,92,93,96	12		
	101156 — 203	48	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 20K	R43	1		
	101156 — 303	49	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 30K	R46	1		
	101156 — 333	50	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 33K	R28,30	2		
	101156 — 473	51	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 47K	R91,94	2		
	101156 — 104	52	RESISTOR, $\frac{1}{4}W$ $\pm 5\%$ 100K	R63,66,72,77	4		



Garden Grove Division

ASSEMBLY PARTS LIST

(CONTINUATION)

1	5	82	REV
S 7 0 1 1	M P	207066 — 003	G

ASSEMBLY PART NUMBER

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE	DECIMAL			
M P	100155 — 181	53	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 75	R1		1				
M P	100155 — 232	54	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 255	R5		1				
M P	100155 — 254	55	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 432	R8		1				
M P	100155 — 289	56	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 1K	R29,39		2				
M P	100155 — 347	57	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 4.02K	R40,44		2				
M P	100155 — 351	58	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 4.42K	R32,33		2				
M P	100155 — 385	59	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 10K	R25,26,36,37,52		5				
M P	100155 — 415	60	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 20.5K	R53,95		2				
M P	100064 — 620	61	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 62	R70		1				
M P	142027 — 001	62	TERMINATOR — 14 PIN 180/390 OHM	1A		1				
M P	142032 — 002	63	TERMINATOR — 16 PIN 180/390 OHM	3A		1				
M P	138002 — 104	64	POTENTIOMETER $\frac{1}{2}W$ 100K	R27		1				
M P	138002 — 202	65	POTENTIOMETER $\frac{1}{2}W$ 2K	R31		1				
M P	102768 — 225	66	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C28,38		2				
M P	102871 — 225	67	CAP., TANT. 20v $\pm 20\%$ 2.2uf	C34		1				
M P	102769 — 475	68	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C32		1				
M P	102870 — 685	69	CAP., TANT. 4v $\pm 20\%$ 6.8uf	C11,13		2				
M P	102768 — 226	70	CAP., TANT. 10v $\pm 20\%$ 22uf	C35,51,52		3				
M P	102667 — 472	71	CAP., CER. 100v $\pm 10\%$.0047uf	C37, 54		2				

FORM 789 (R 03/82) (Continuation)

PAGE 4 OF 7

elpher
ELECTRONIC COMPONENTS CO., INC.

ASSEMBLY PARTS LIST

(CONTINUATION)

S	7	0	1	1	M	P	REV	003	REV	0
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ASSEMBLY PART NUMBER

Garden Grove Division

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE	DECIMAL			
M P	102667 — 102	72		CAP., CER. 100v +10% .001uf	C43,46-49	5				
M P	102665 — 104	73		CAP., CER. 50v -20+80% .1uf	C1,5,7-10,12,14,15, 23-27,29-31,33,36,39-42	23				
M P	102667 — 104	74		CAP., CER. 100v +10% .1uf	C44,45	2				
M P	102673 — 479	75		CAP., CER. 100v +10% 4.7pf	C50	1				
M P	102669 — 200	76		CAP., CER. 100v +5% 20pf	C2	1				
M P	102669 — 330	77		CAP., CER. 100v +5% 33pf	C16	1				
M P	102669 — 620	78		CAP., CER. 100v +5% 62pf	C53	1				
M P	102669 — 101	79		CAP., CER. 100v +5% 100pf	C22	1				
M P	102669 — 131	80		CAP., CER. 100v +5% 130pf	C21	1				
M P	102669 — 301	81		CAP., CER. 100v +5% 300pf	C20	1				
M P	102669 — 122	82		CAP., CER. 100v +5% 1200pf	C18,19	2				
M P	102669 — 302	83		CAP., CER. 100v +5% 3000pf	C17	1				
M P	122502 — 001	84		INDUCTOR, 10uh +5% 290ma	L7,8	2				
M P	122502 — 010	85		INDUCTOR, 820uh +5% 77ma	L3,4	2				
M P	122502 — 009	86		INDUCTOR, 360uh +5% 108ma	L5,6	2				
M P	102002 — 001	87		BUS BAR - VERTICAL		1				
M P	100143 — 002	88		PAD, TRANSISTOR T0-5	Use with Q1, Q2	2				
M P	120905 — 011	89		HEADER, DOUBLE ROW, STRAIGHT	5C	1				
M P	120916 — 001	90		HEADER, RIGHT ANGLE	J13	1				

FORM 785 (R 03/82) (Continuation)

PAGE 5 OF 7

[illegible]



ASSY, PWB - MAIN - 90 IPS

DSC: R

DOC CODE:
Q120

S 7 0 1 1	207066 — 004	G
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ASSEMBLY PART NUMBER	
1	1000000000

FORM 796 (R 03/82) PAGE 1 OF 1

PAGE 1 OF 1



(CONTINUATION)

S 7 0 1 1	M P	207066 — 004	G
ASSEMBLY PART NUMBER			

100

FORM 795 (R 03/82) (Continuation) PAGE 2 OF 7

PAGE 2 OF 7



(CONTINUATION)

S 7 0 1 1	M P	207000-004	C
ASSEMBLY PART NUMBER			

[illegible]

FORM 796 (R 03/82) (Continuation)

PAGE 1 OF 1

(Continued)

S 7 0 1 1	M P	207066 - 004	G
ASSEMBLY PART NUMBER			

[illegible]

FORM 785 (R 03/82) (Continuation) PAGE 4 OF 7

PAGE 4 OF 7



(Continuation)

S 7 0 1 1	M P	207066 - 004	C
ASSEMBLY PART NUMBER			

21 JAN 1967

FORM 795 (R 03/82) (Continuation) PAGE 5 OF 7

PAGE 2 OF 1

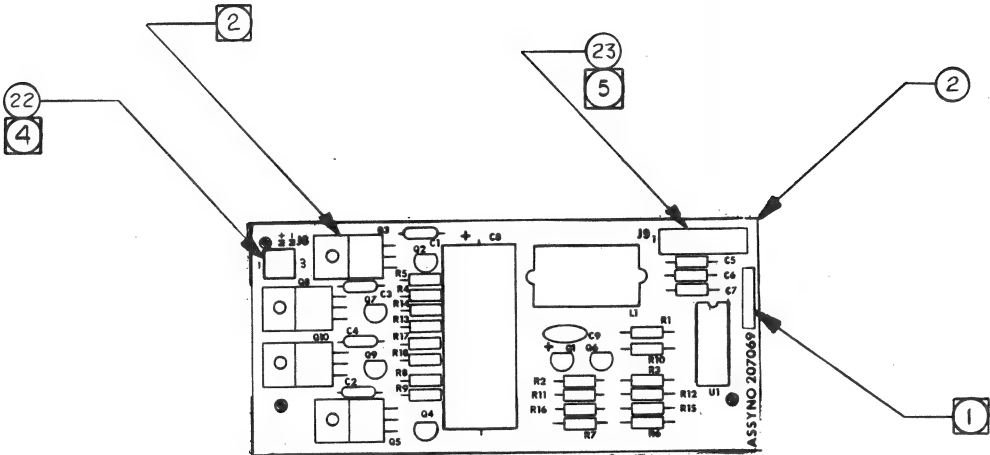


(CONTINUATION)

S 7 0 1 1	M F	207066 - 004	U
ASSEMBLY PART NUMBER			

[illegible]

REVISIONS				207069-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT RELEASE PER ERO 820361	KW	5-11-82		
02	ECO 12303	KM	KAM	6-10-82	Furman
03	ECO 12382	Jad	KAM	8-13-82	R.R.H.
04	ECO 12441	Jad	KAM	10-26-82	
A	PROD. REL ERO 820421/A	Kam	12/19/82		
B	ECO 12592	Kam	2-3-83		



OBsolete


REPLACED BY: 207076-100
QTY # 12592
DATE: 2-1-83

HISTORICAL RECORD
DO NOT DESTROY

- 5 CUT OFF PIN 6 (KEY POSITION) WITHIN .030
- 4 CUT OFF PIN 1 (KEY POSITION) WITHIN .030
- 3. REFERENCE SCHEMATIC DRAWING 207069-200
- 2 APPLY .25 INCH LONG DOUBLE BACK TAPE UNDER Q3,Q5,Q8,Q10. APPLY FIRMLY TO PWB AFTER FLOW SOLDER.
- 1 MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 INCH HIGH CHARACTERS PER CIPHER DATA SPEC. 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN DON WILSON MAY 6-82		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.			
1. TOLERANCES XX± ANGULAR XXX± ±	CHECK <i>Don Mahlon</i> 5/13/82		ASSEMBLY-PWB, MOTOR DRIVER			
2. BREAK ALL SHARP EDGES APPROX. .010	APPR. <i>R.L. Field</i> 5/13/82					
3. MACH. SURFACES ✓	MATERIAL	FINISH	SCALE 1:1	SIZE C	207069-100	CODE Q 120
4. ALL DIMS IN INCHES.	MODEL No. QUARTERBACK	DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1	OF 1	REV. B
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	NEXT ASSY 207358 & 207359					

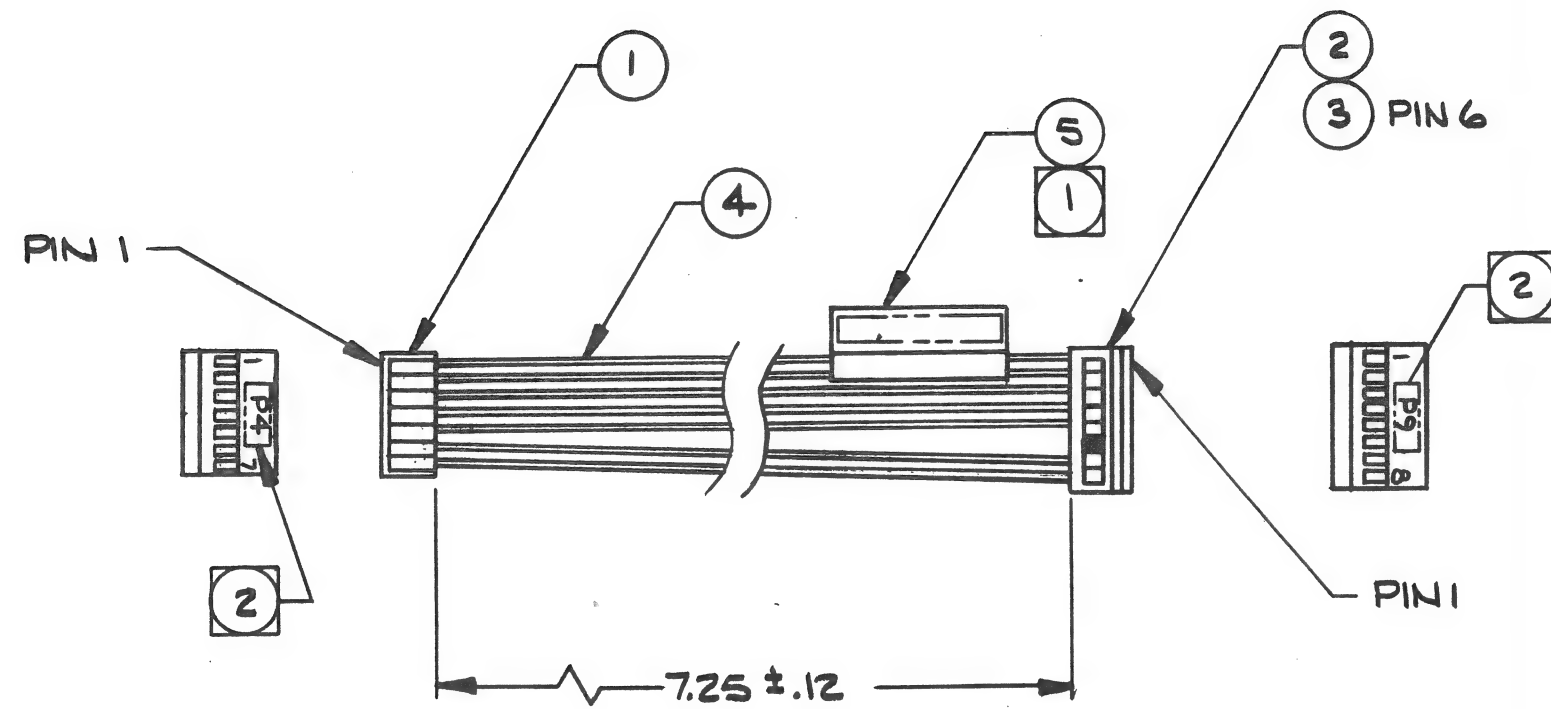
alber HISTORICAL RECORD ASSEMBLY PARTS LIST

DO NOT DESTROY		207069 — 001		REV B		
ASSEMBLY TITLE: ASSY, PWB-MOTOR DRIVER		DOC CODE: Q120				
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY WHOLE DECIMAL	U.M. CODE
—		1				
207069 — 001		2	PROCESS BOARD		1	
100336 — 001		3	I.C. 7438		1	
—		4				
151027 — 002		5	TRANSISTOR, NPN TIPL20	REPLACED BY: — 207076-001	2	
151028 — 002		6	TRANSISTOR, PNP TIPL25	CR/O #: 12592	2	
151030 — 001		7	TRANSISTOR, NPN 2N3904	DATE: 2-1-83	4	
151031 — 001		8	TRANSISTOR, PNP 2N3906		2	
—		9				
101156 — 101		10	RESISTOR, 1/4W ± 5% 100	R5,R9,R14,R18	4	
101156 — 561		11	RESISTOR, 1/4W ± 5% 560	R7,R16	2	
101156 — 392		12	RESISTOR, 1/4W ± 5% 3.9K	R1,R2,R6,R10,R11,R15	6	
101156 — 682		13	RESISTOR, 1/4W ± 5% 6.8K	R4,R8,R13,R17	4	
101156 — 103		14	RESISTOR, 1/4W ± 5% 10K	R3,R12	2	
PREPARED BY	DATE	04/12/94	03/12/44	02/12/88	01/12/83	01/12/83
CHECKED BY	DATE	4/6/82	03/12/44	02/12/88	01/12/83	01/12/83
DESIGN ENGINEER	DATE	5/12/82	03/12/44	02/12/88	01/12/83	01/12/83
DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.
207358, 207359		207358, 207359		207358, 207359		207358, 207359
QUARTERBACK		QUARTERBACK		QUARTERBACK		QUARTERBACK

alber ASSEMBLY PARTS LIST (CONTINUATION)

207069 — 001		REV B				
ASSEMBLY TITLE: ASSY, PWB-MOTOR DRIVER		DOC CODE: Q120				
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY WHOLE DECIMAL	U.M. CODE
—		15				
102608 — 108		16	CAP, ELEC 35V-10% ± 50% 1000uf	C8	1	
102665 — 104		17	CAP, CER. 50V-20 ± 80% .1uf	C5,C6,C7	3	
102667 — 103		18	CAP, CER. 100V ± 10% .01uf	C1,C2,C3,C4	4	
—		19				
122522 — 001		20	INDUCTOR, HIGH CURRENT FILTER ± 10% 100uh	L1	1	
—		21				
120917 — 003		22	HEADER, STRAIGHT 3-PIN	J8	1	
120917 — 008		23	HEADER, STRAIGHT 8-PIN	J9	1	
—		24				
150107 — 001		25	TAPE, DOUBLE COATED POLYURETHANE FOAM	Q3,Q5,Q8,Q10	1	0.6
207069 — 200		26	SCHEMATIC	REF	0	
207069 — 100		27	ASSY. DWG	REF	0	
207067 — 001		28	MASTER ARTWORK	REF	0	
—		29				
—		30				
—		31				
—		32				
—		33				

REVISIONS				207070-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/14/82	—	




P4				P9
1	—	S REV	—	1
2	—	S FWD	—	2
3	—	+5 RET	—	3
4	—	+5V	—	4
5	—	OL	—	5
		KEY		6
6	—	+24 RET	—	7
7	—	+24V	—	8

- 2 MARK CONNECTORS WITH APPROPRIATE REF DESIGNATION USING .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- 1 MARK WITH PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

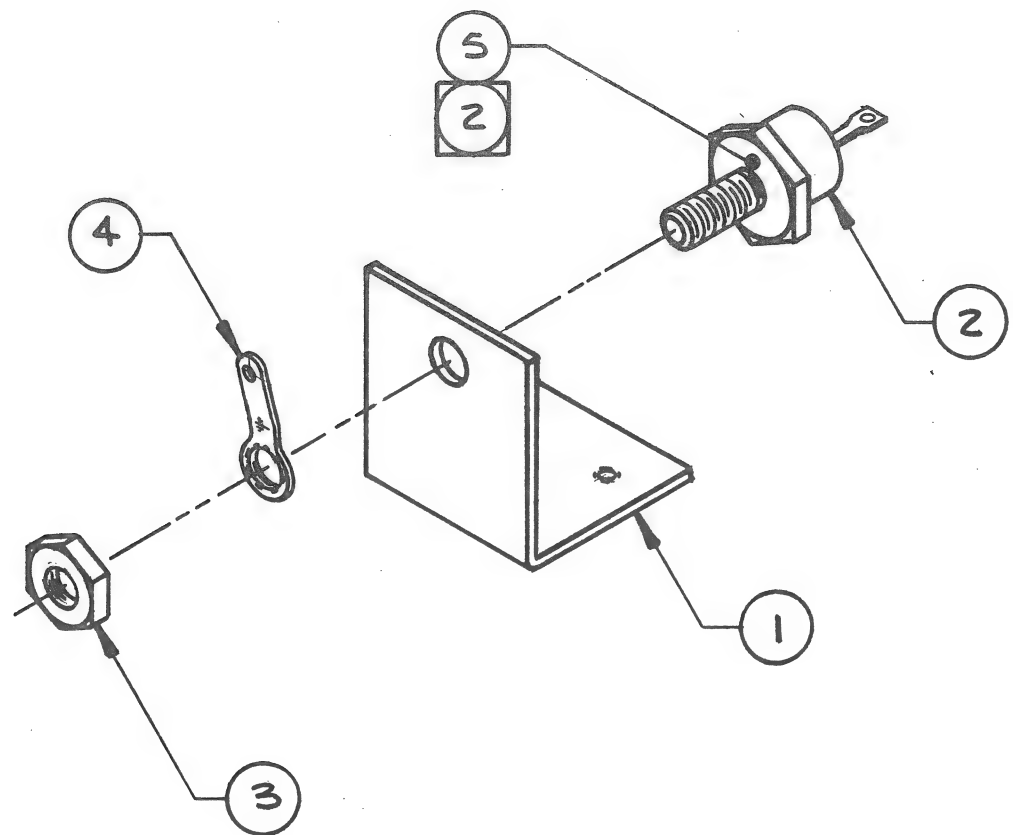
NOTES UNLESS SPECIFIED		DRAWN MATTHES 5/24/82		 Garden Grove Division		<small>THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.</small>	
1. TOLERANCES .XX± — ANGULAR .XXX± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES —✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK Kam Mahraw 6/1/82 APPR. [Signature] 6/1/82 MATERIAL FINISH MODEL No. QB NEXT ASSY					
DSC: R				ASSY, CABLE-MOTOR DRIVER PWB, 90 IPS		QTY 115 REV. 1	
				SCALE 1/1 SIZE B		207070-100 REV. A	
				DO NOT SCALE THIS DRAWING CODE IDENT		SHEET 1 OF 1	



ASSEMBLY TITLE	DSC CODE
ASSY. CABLE - MOTOR DRIVER PWB, 90 IPS	Q115

[illegible]

REVISIONS				207072-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/14/82	—	




PART NUMBER SEE SEPARATE M/L

- 2

APPLY ITEM 5 (THERMAL COMPOUND) TO BASE OF ITEM 2 (DIODE) BEFORE INSTALLATION.

1. BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

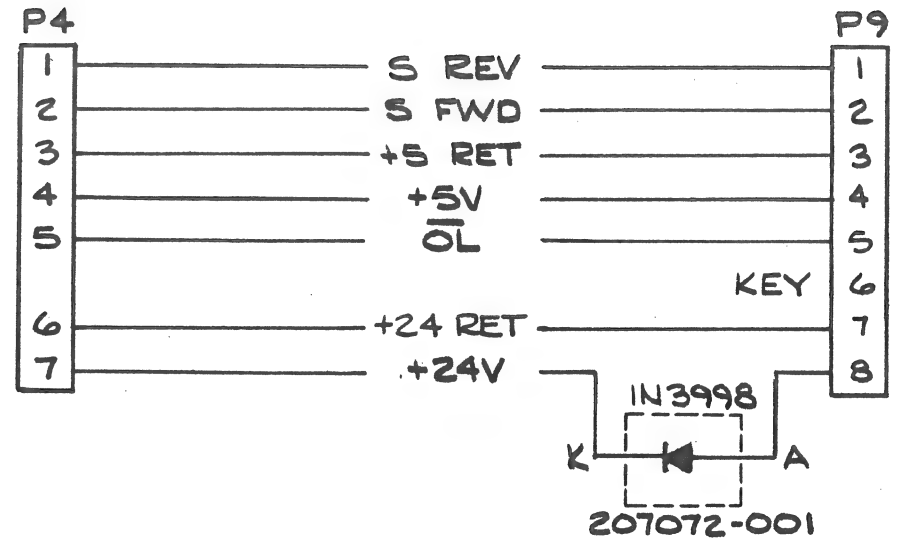
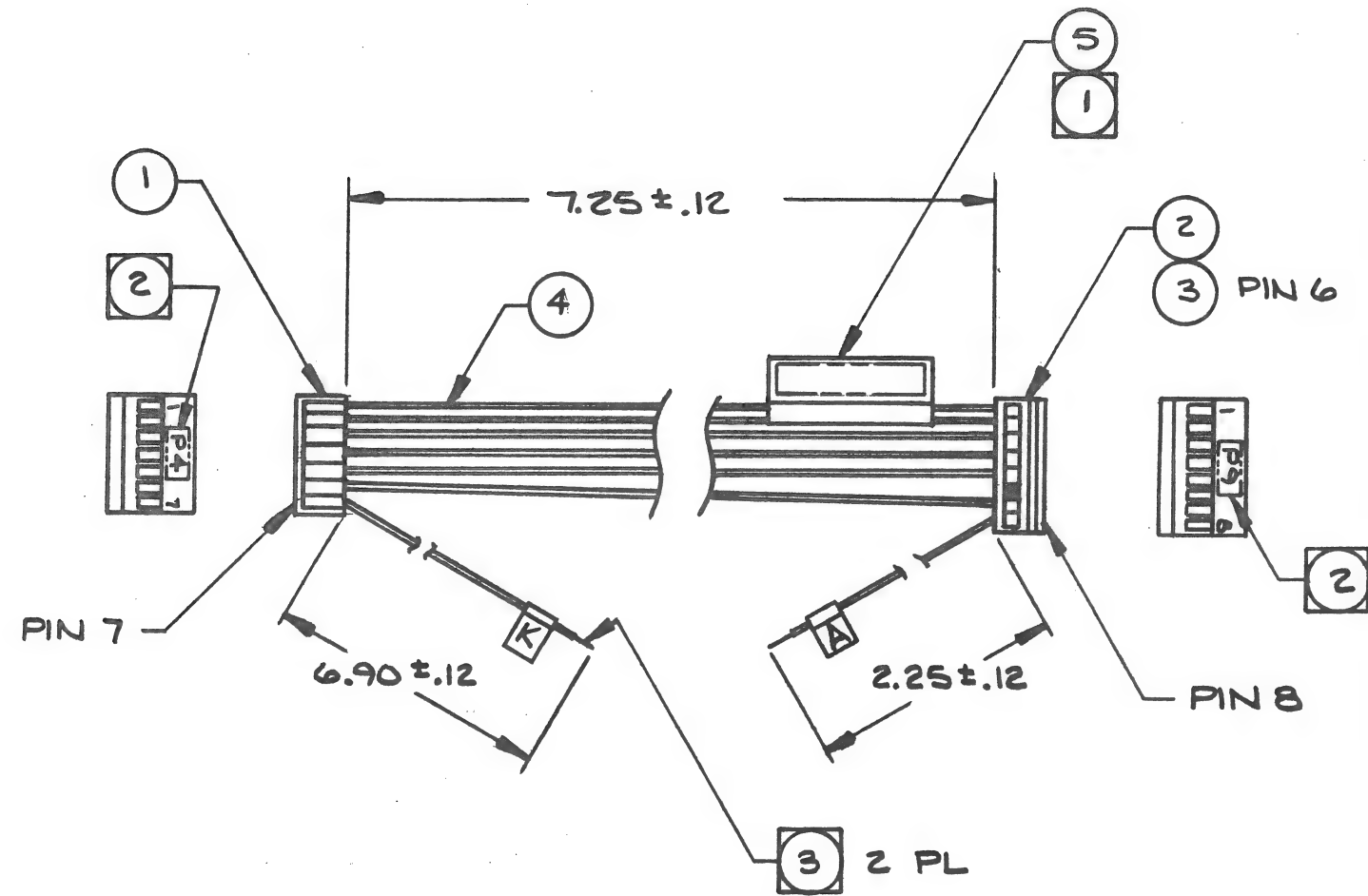
NOTES UNLESS SPECIFIED		DRAWN <u>MATTHES</u> <u>5/26/82</u>		 Garden Grove Division		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	
1. TOLERANCES .XX± ——— ANGULAR .XXX± ——— ± ——— 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ——— ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK <u>Kam Makhlawi</u> <u>6/1/82</u>					
		APPR. <u>G. Perez</u> <u>6/14/82</u>					
		MATERIAL					
		FINISH					
		MODEL No. <u>QB</u>		SCALE <u>1/1</u>		SIZE <u>B</u>	
		NEXT ASSY				ASSY, DIODE - SLOW SPEED MOTOR KIT, 30 IPS 207072-100	
DSC: R				DO NOT SCALE THIS DRAWING		CODE IDENT	
						REV. <u>A</u> SHEET <u>1</u> OF <u>1</u>	



ASSEMBLY TITLE	DOC CODE
ASSY, DIODE - MOTOR DRIVER, 30 IPS	Q100

[illegible]

REVISIONS					207073-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
01	PILOT REL PER ERO 820368	KAM	—	—		
A	PROD. REL ERO 820421/A	Kam	12/14/82	—		



- 3 STRIP WIRE ENDS BACK .19 AND LABEL AS SHOWN.
- 2 MARK CONNECTORS WITH APPROPRIATE REF DESIGNATION USING .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- 1 MARK WITH PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

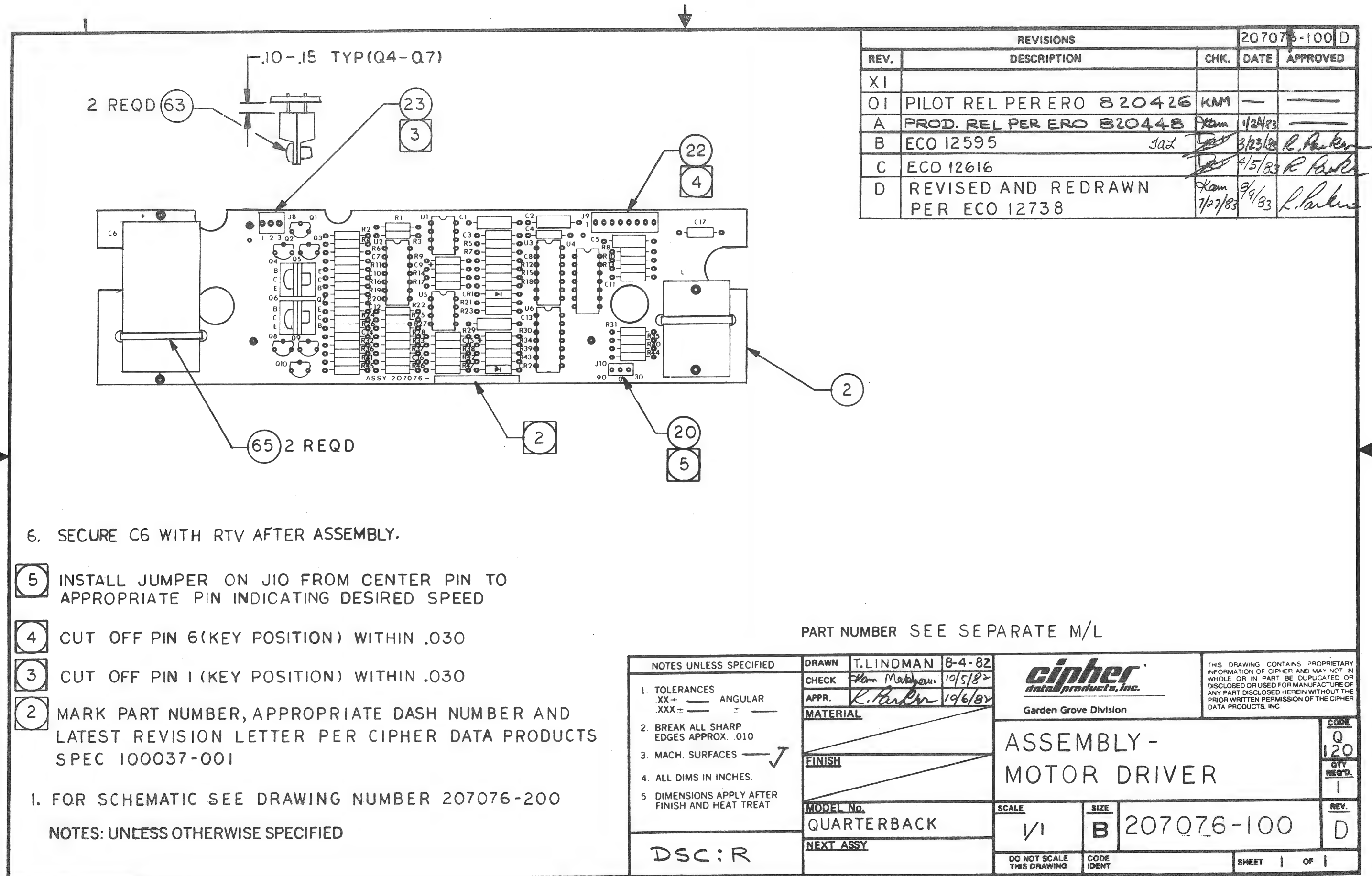
NOTES UNLESS SPECIFIED		DRAWN MATTHES 5/20/82		 Garden Grove Division		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	
1. TOLERANCES .XX ± — ANGULAR .XXX ± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK Kam Makhan 6/1/82 APPR. G. Perez 6/4/82 MATERIAL FINISH MODEL No. QB NEXT ASSY					
DSC : R		SCALE 1/1		SIZE B		207073-100	
		DO NOT SCALE THIS DRAWING		CODE IDENT		SHEET 1 OF 1	



5		U2		61		REV
S 7 0 1 1		M P		207073 - 001		A
ASSEMBLY PARTS NUMBER						

ASSEMBLY TITLE	DOC CODE
ASSY. CABLE - MOTOR DRIVER PWB, 30 IPS	Q115

[illegible]





S 7 0 1 1	M P	207076 - 001	REV D
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ASSEMBLY PARTS NUMBER

ASSEMBLY TITLE	MOTOR DRIVER	DSC: R	DSC CODE Q 120
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PART NUMBER		ITEM NO.		DESCRIPTION	REMARKS	QUANTITY		U.M.
						WHOLE	DECIMAL	CODE
19		28				12		18
	-		1					
	207075- 001		2	BOARD, PROCESS		1		
	-		3					
	-		4					
	102665- 104		5	CAPACITOR, 50V., .1UF	C3, C4, C10, C11, C17	5		
	102667- 103		6	CAPACITOR, 10%, 100V., .01UF	C7, C12, C14, C16	4		
	102667- 104		7	CAPACITOR, 10%, 100V., .1UF	C13	1		
	102667- 183		8	CAPACITOR, 10%, 100V., .018UF	C8	1		
	102668- 472		9	CAPACITOR, 5%, 50V., .0047UF	C2, C5	2		
	102667- 473		10	CAPACITOR, 10%, 100V., .047UF	C1	1		
	102608- 108		11	CAPACITOR, 35V, 1000UF	C6	1		
	102768- 106		12	CAPACITOR, 20%, 10V, 10UF	C9, C15	2		
	-		13					
	-		14					

PREPARED BY	T.A. Lindman	DATE	6-29-82	C	12616	B	R. R. 12/45/82					DWG REL NO.	DATE
CHECKED BY	K. R. Mahan	7/7/82	B	12595	B	K. R. 7/7/82						820426	10/06/82
DESIGN ENGINEER	R. R. Mahan	10/6/82	A	820426	A	12595	12/45/82					MM	DD
			01	REL	REL	REL	REL					MM	DD
			X1									MM	DD
			REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE				MM	DD
						D	12738	R. R. 7/27/82				MM	DD

MODEL NO.	
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FORM 795 (R 09/80)

PAGE 1 OF 5



1	52	51	REV
S 7 0 1 1	M P	207076-001	D
ASSEMBLY PART NUMBER			

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	28				WHOLE 12	DECIMAL 18	
M P	—	15					
M P	122522—001	16	INDUCTOR, HIGH CURRENT 100 μ h+10% 3A	L1	1		
M P	—	17					
M P	107201—001	18	DIODE, 1N4150	CR1, CR2	2		
M P	—	19					
M P	104903—001	20	CLIP, JUMPER	J10	1		
M P	100360—001	21	PIN, WIRE WRAP, .025SQ	J10	3		
M P	120917—008	22	HEADER, .100CTR, 8 POSITION	J9	1		
M P	120917—003	23	HEADER, .100CTR, 3 POSITION	J8	1		
M P	—	24					
M P	123079—001	25	I.C. 74LS38	U2	1		
M P	123248—001	26	I.C. 74LS136	U3	1		
M P	125044—001	27	I.C. LM358	U1, U5	2		
M P	125043—001	28	I.C. NE555	U4	1		
M P	123029—001	29	I.C. 74LS00	U6	1		
M P	—	30					
M P	100155—270	31	RESISTOR, 1%, 1/4W, 634	R44	1		
M P	100155—289	32	RESISTOR, 1%, 1/4W, 1K	R15, R21, R30	3		
M P	100155—314	33	RESISTOR, 1%, 1/4W, 1.82K	R35	1		

FORM 795 (R 03/82) (Continuation)

PAGE 2 OF 5



S 7 0 1 1	M P	207076-001	REV D
ASSEMBLY PART NUMBER			

Serial Number Division		(CONTINUATION)				QUANTITY		U.M. CODE	
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		WHOLE DECIMAL	
19	28	34	40	46	52	58	64	70	76
M P	100155- 318	34		RESISTOR,1%,1/4W,2K		R40		1	
M P	100155- 334	35		RESISTOR,1%,1/4W,2.94K		R17		1	
M P	100155- 347	36		RESISTOR,1%,1/4W,4.02K		R18,R23		2	
M P	100155- 385	37		RESISTOR,1%,1/4W,10K		R29,R42		2	
M P	100155- 444	38		RESISTOR,1%,1/4W,41.2K		R10		1	
M P	100155- 452	39		RESISTOR,1%,1/4W,49.9K		R12,R34		2	
M P	100155- 460	40		RESISTOR,1%,1/4W,60.4K		R31		1	
M P	100155- 477	41		RESISTOR,1%,1/4W,90.9K		R7		1	
M P	100155- 481	42		RESISTOR,1%,1/4W,100K		R5,R9,R14,R38		4	
M P	100155- 548	43		RESISTOR,1%,1/4W,499K		R8,R39		2	
M P	101156- 101	44		RESISTOR,5%,1/4W,100		R16,R25,R28,R37		4	
M P	101156- 102	45		RESISTOR,5%,1/4W,1K		R47		1	
M P	101156- 103	46		RESISTOR,5%,1/4W,10K		R2,R36		2	
M P	101156- 122	47		RESISTOR,5%,1/4W,1.2K		R13		1	
M P	101156- 202	48		RESISTOR,5%,1/4W,2K		R1		1	
M P	101156- 203	49		RESISTOR,5%,1/4W,20K		R43,R46		2	
M P	101156- 392	50		RESISTOR,5%,1/4W,3.9K		R4,R6,R20,R26,R27,R32		6	
M P	101156- 561	51		RESISTOR,5%,1/4W,560		R22,R33		2	
M P	101156- 682	52		RESISTOR,5%,1/4W,6.8K		R19,R24,R41,R45		4	

FORM 795 (R 03/82) (Continuation)

PAGE 5 OF 5



S 7 0 1 1	M P	207076 - 001	D
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ASSEMBLY PART NUMBER

19		20		21		22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50		51		52		53		54		55		56		57		58		59		60		61		62		63		64		65		66		67		68		69		70		71		72		73		74		75		76		77		78		79		80		81		82		83		84		85		86		87		88		89		90		91		92		93		94		95		96		97		98		99		100		101		102		103		104		105		106		107		108		109		110		111		112		113		114		115		116		117		118		119		120		121		122		123		124		125		126		127		128		129		130		131		132		133		134		135		136		137		138		139		140		141		142		143		144		145		146		147		148		149		150		151		152		153		154		155		156		157		158		159		160		161		162		163		164		165		166		167		168		169		170		171		172		173		174		175		176		177		178		179		180		181		182		183		184		185		186		187		188		189		190		191		192		193		194		195		196		197		198		199		200		201		202		203		204		205		206		207		208		209		210		211		212		213		214		215		216		217		218		219		220		221		222		223		224		225		226		227		228		229		230		231		232		233		234		235		236		237		238		239		240		241		242		243		244		245		246		247		248		249		250		251		252		253		254		255		256		257		258		259		260		261		262		263		264		265		266		267		268		269		270		271		272		273		274		275		276		277		278		279		280		281		282		283		284		285		286		287		288		289		290		291		292		293		294		295		296		297		298		299		300		301		302		303		304		305		306		307		308		309		310		311		312		313		314		315		316		317		318		319		320		321		322		323		324		325		326		327		328		329		330		331		332		333		334		335		336		337		338		339		340		341		342		343		344		345		346		347		348		349		350		351		352		353		354		355		356		357		358		359		360		361		362		363		364		365	
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FORM 795 (R 03/82) (Continuation)

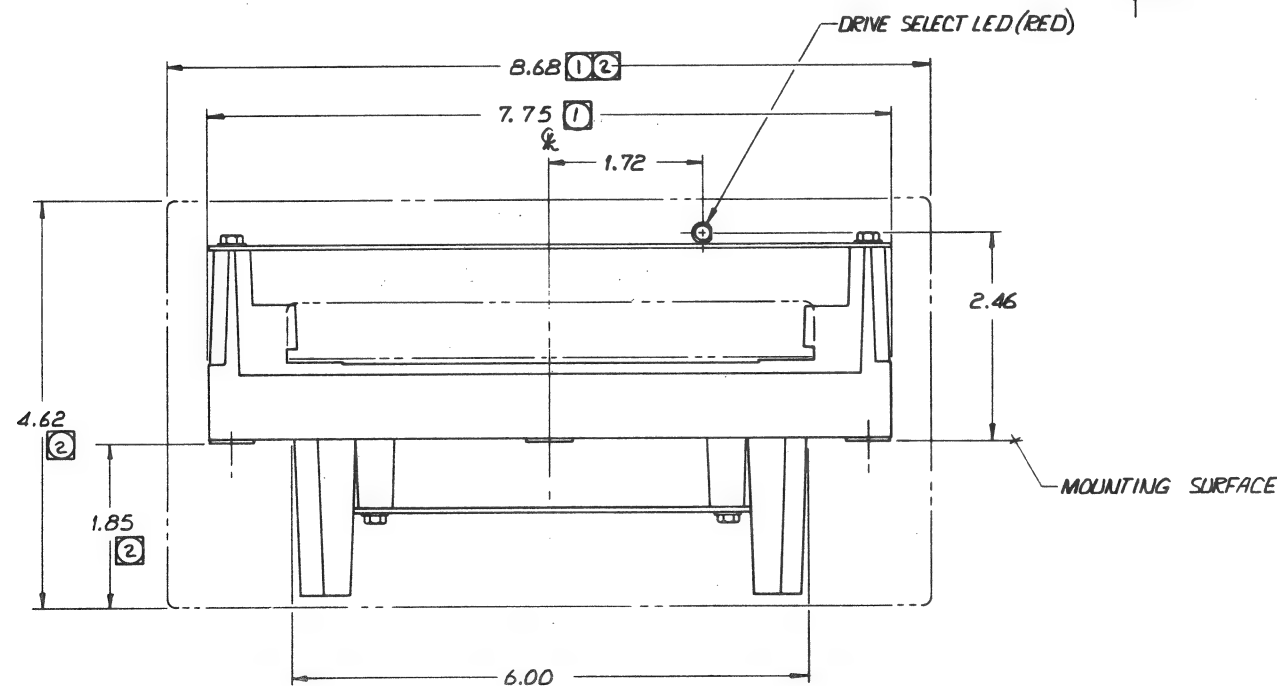
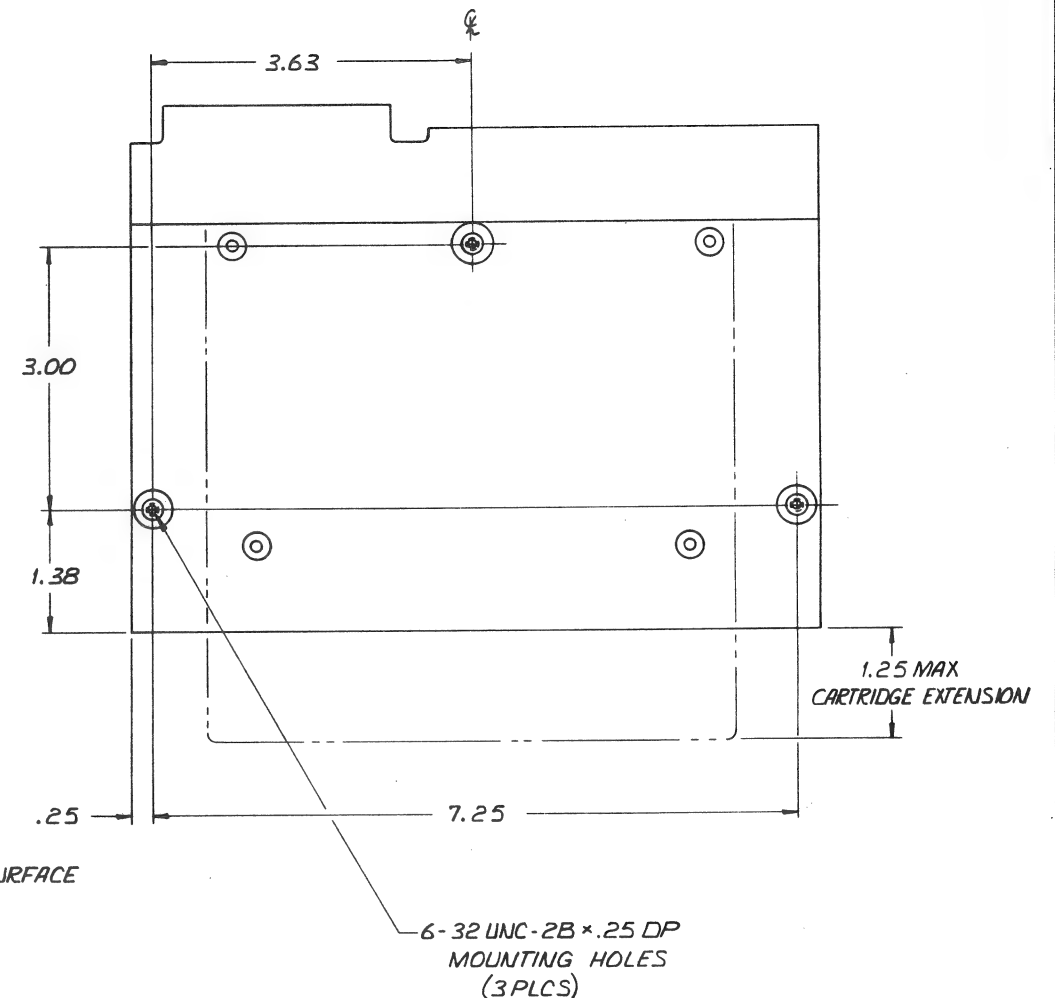
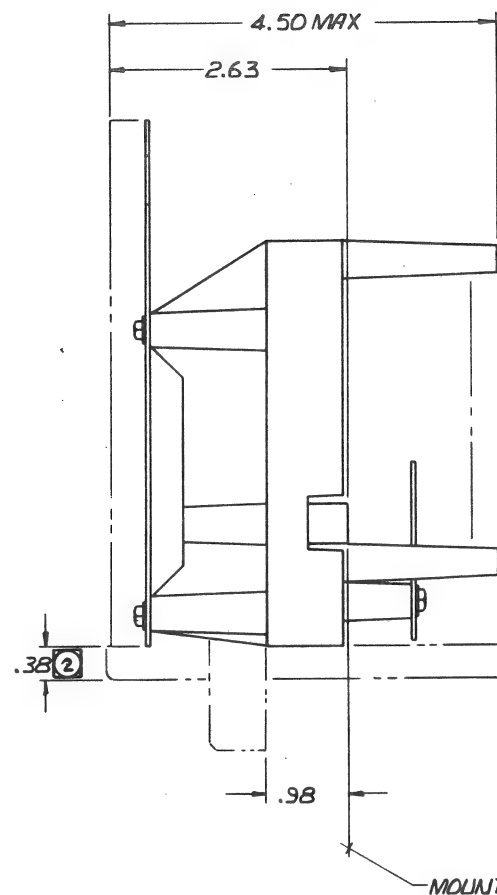
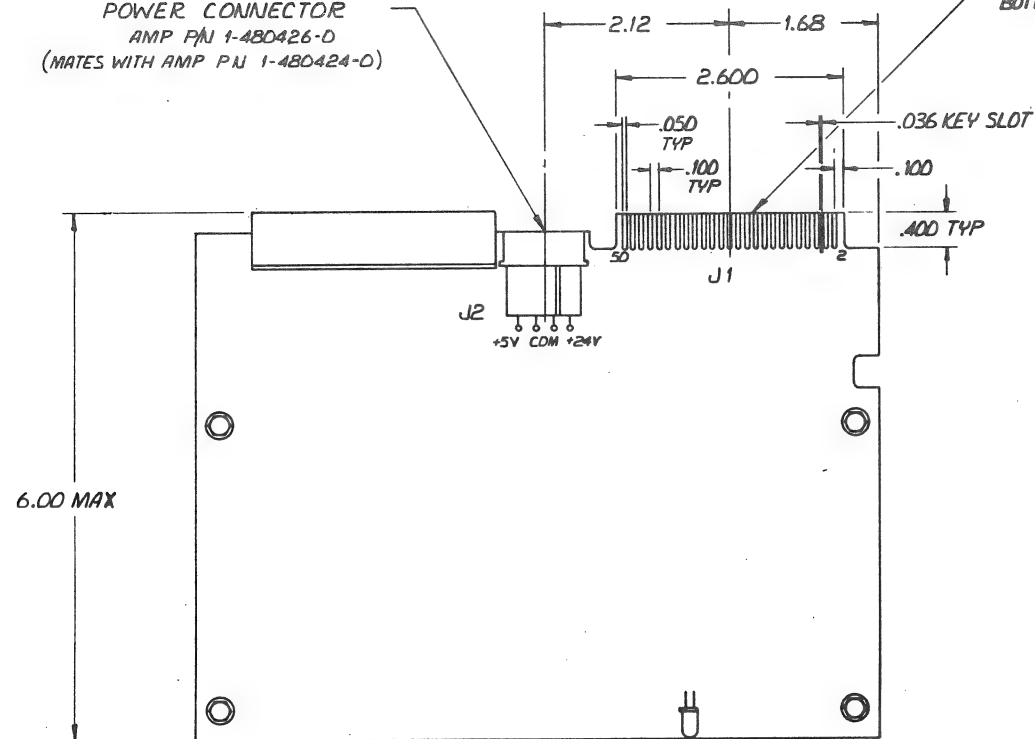
PAGE 4 OF 5

8 7 6 5 4 3 2 1

POWER CONNECTOR
AMP P/N 1-480426-D
(MATES WITH AMP P/N 1-480424-D)

INPUT/OUTPUT CONNECTOR
TOP (COMPONENT) SIDE: EVEN NUMBERED FINGERS
BOTTOM (SOLDER) SIDE: ODD NUMBERED FINGERS
(MATES WITH 3M P/N 3415-0001 OR EQUIV.)

REVISIONS				
REV	DESCRIPTION	CHK	DATE	APPROVED
A	ENG REL	NP	1/1/81	CK 1/1/81
OI	REL REL ERO 820309	KAM	3/5/82	
OI	ECO 12350	KAM	8/19/84	
A	PROD REL ERO 820421/A		12/1/84	



② OPTIONAL FRONT PLATE DIMENSIONS
① SYMMETRICAL ABOUT C WITHIN .01
NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER 207302-001	
NOTES UNLESS SPECIFIED	DRAWN MATTHES 8-3-82
1. TOLERANCES .XX±.02 ANGULAR ±	CHECK KAM 8-3-82
2. BREAK ALL SHARP EDGES APPROX. .010	APPR. [Signature]
3. MACH. SURFACES	MATERIAL
4. ALL DIMS IN INCHES.	FINISH
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO. QB
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.	NEXT ASSY 207350
SCALE 1/1	
SIZE D	
207302-001	
DO NOT SCALE THIS DRAWING	
CODE IDENT 52485	
SHEET 1 OF 1	

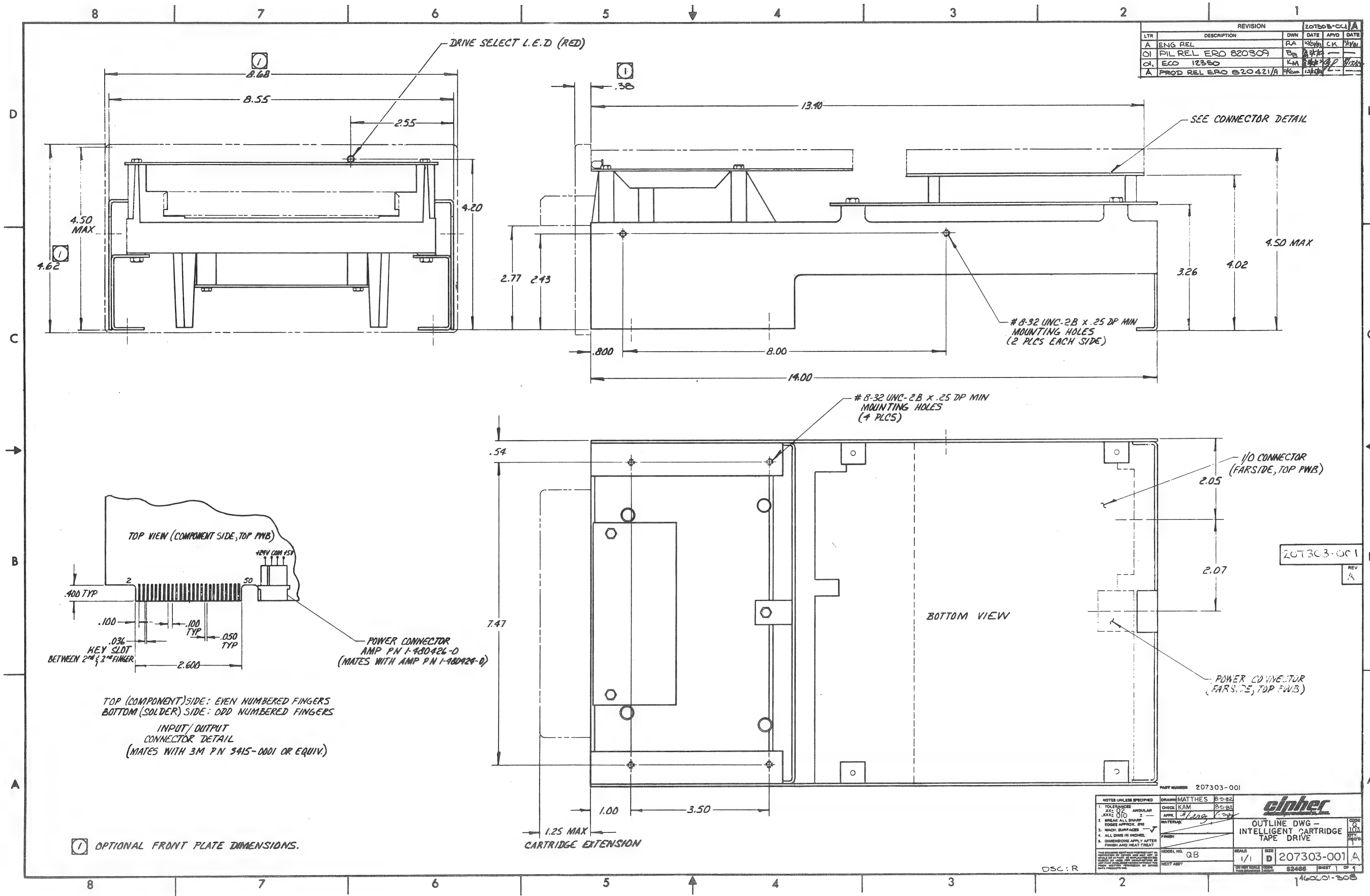
cipher
data products, inc.

OUTLINE DWG -
BASIC CARTRIDGE
TAPE DRIVE

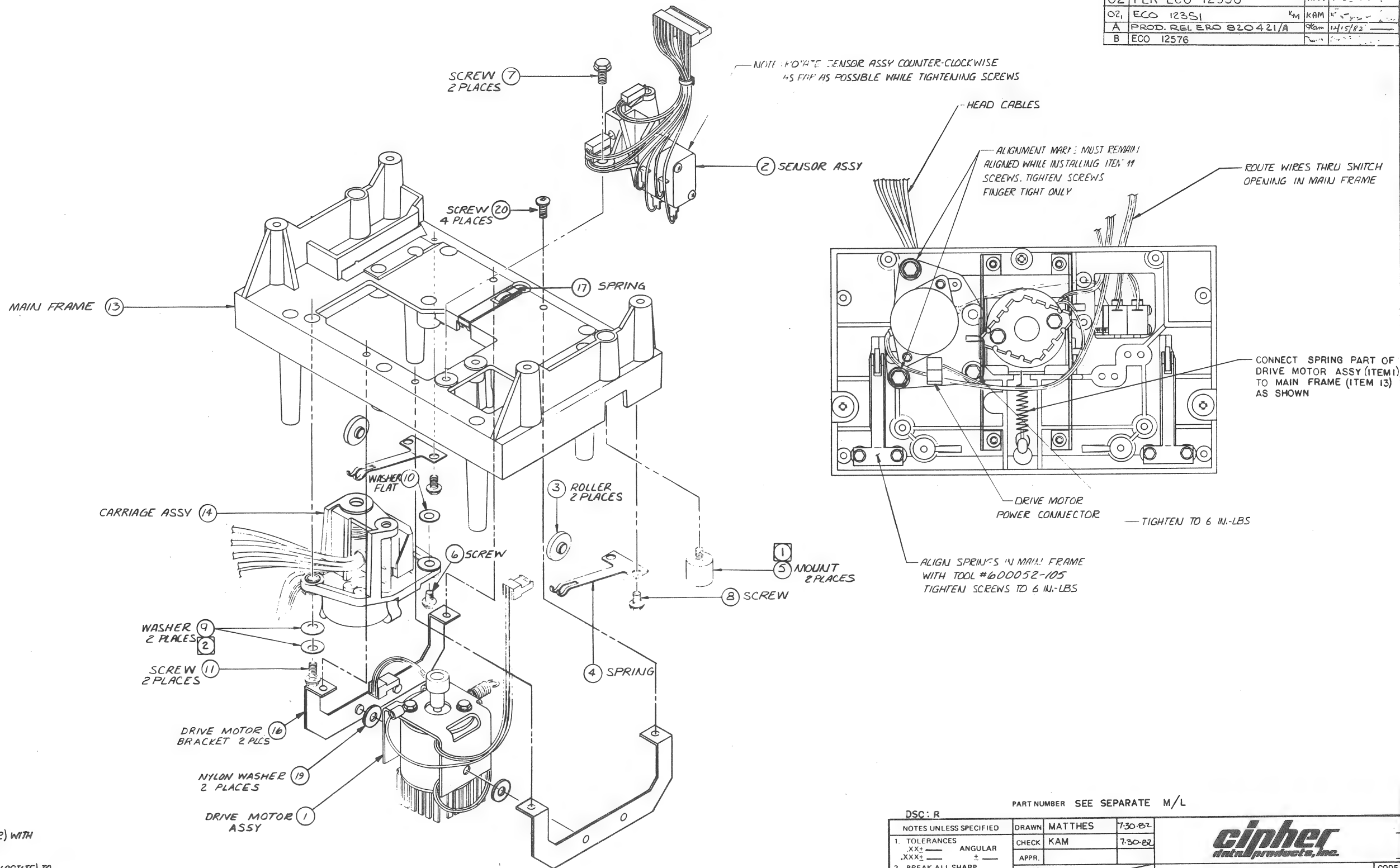
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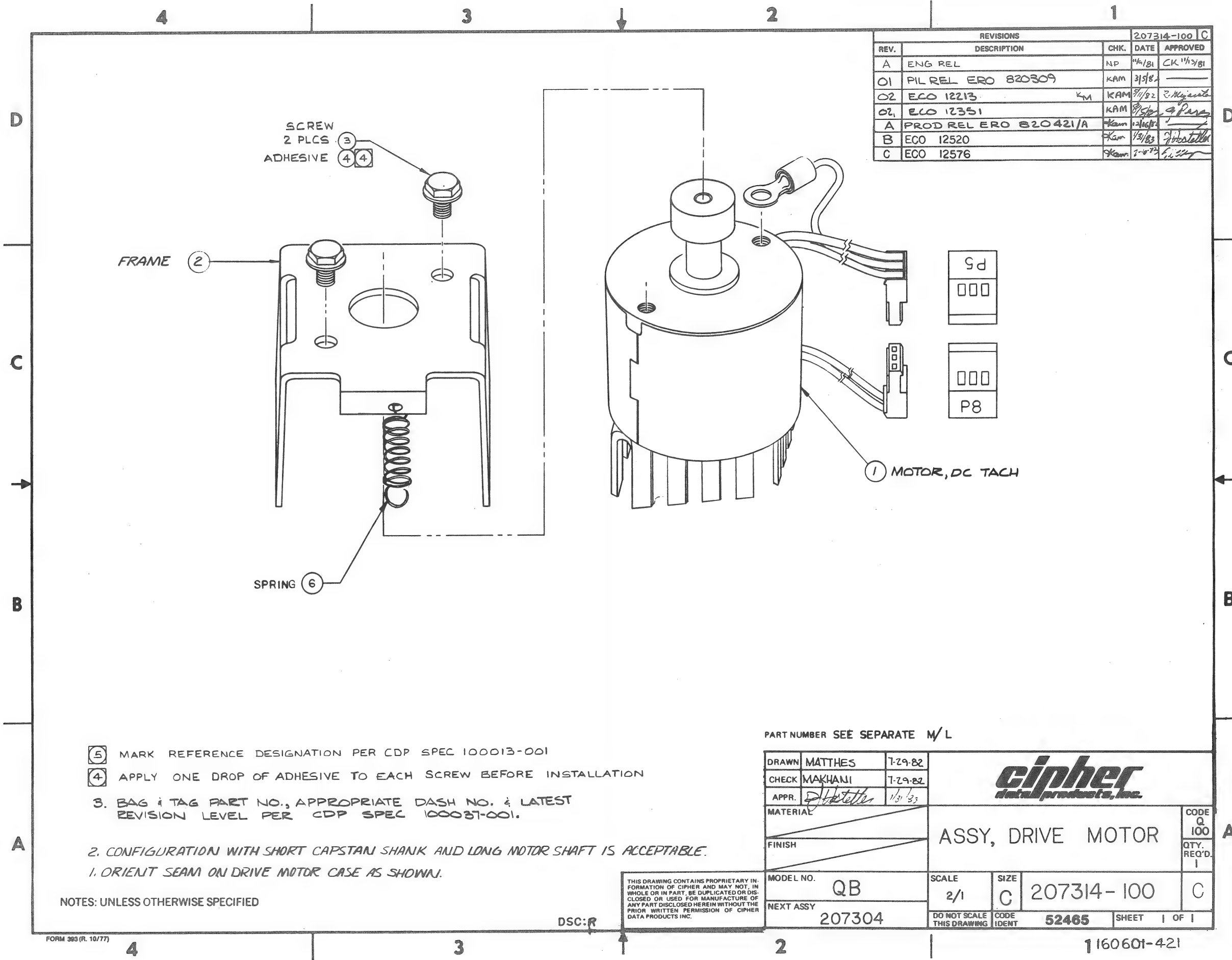
REVISIONS				207304-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL	NI	11/4/81	CK	11/4/81
01	PIL REL ERO 820309	KAM	3/5/82		
02	PER ECO 12336	KAM			
02	ECO 12351	KAM			
A	PROD. REL ERO 820421/A	KAM	11/15/82		
B	ECO 12576				



- INSTALL ITEMS 9 (BELLEVILLE WASHER) WITH CONCAVE SIDES TOWARD EACH OTHER
- APPLY ONE DROP OF ITEM 12 (GREEN LOCTITE) TO THREADS OF ITEM 5 (SHOCK MOUNT) PRIOR TO ASSEMBLY

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R		PART NUMBER SEE SEPARATE M/L	
NOTES UNLESS SPECIFIED	DRAWN MATTHES	7-30-82	
1. TOLERANCES .XX± — ANGULAR .XXX± — ± —	CHECK KAM	7-30-82	
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		MAIN FRAME ASSY
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO. QB		
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.		SCALE 1/1	SIZE D
NEXT ASSY 207358, 207359		DO NOT SCALE THIS DRAWING	CODE IDENT 52465
		SHEET	OF 1




REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	11/1/81	CK 11/3/81
01	PIL REL ERO 820309	KAM	3/5/82	
02	ECO 12213	KAM	8/11/82	R. M. M. M.
02	ECO 12351	KAM	8/15/82	9/1/82
A	PROD REL ERO 820421/A	KAM	12/16/82	
B	ECO 12520	KAM	1/3/83	J. H. H. H.
C	ECO 12576	KAM	1-10-83	E. J. J. J.

- 5 MARK REFERENCE DESIGNATION PER CDP SPEC 100013-001
- 4 APPLY ONE DROP OF ADHESIVE TO EACH SCREW BEFORE INSTALLATION
- 3. BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

2. CONFIGURATION WITH SHORT CAPSTAN SHANK AND LONG MOTOR SHAFT IS ACCEPTABLE.
1. ORIENT SEAM ON DRIVE MOTOR CASE AS SHOWN.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

DRAWN	MATTHES	7-29-82		
CHECK	MAKHANI	7-29-82		
APPR.	<i>J. H. H. H.</i>	11/31/83		
MATERIAL				CODE Q 100
FINISH				QTY. REQ'D. 1
MODEL NO.	QB	SCALE 2/1	SIZE C	207314-100
NEXT ASSY	207304	DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1 OF 1

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.

DSC:R

FORM 383 (R. 10/77)

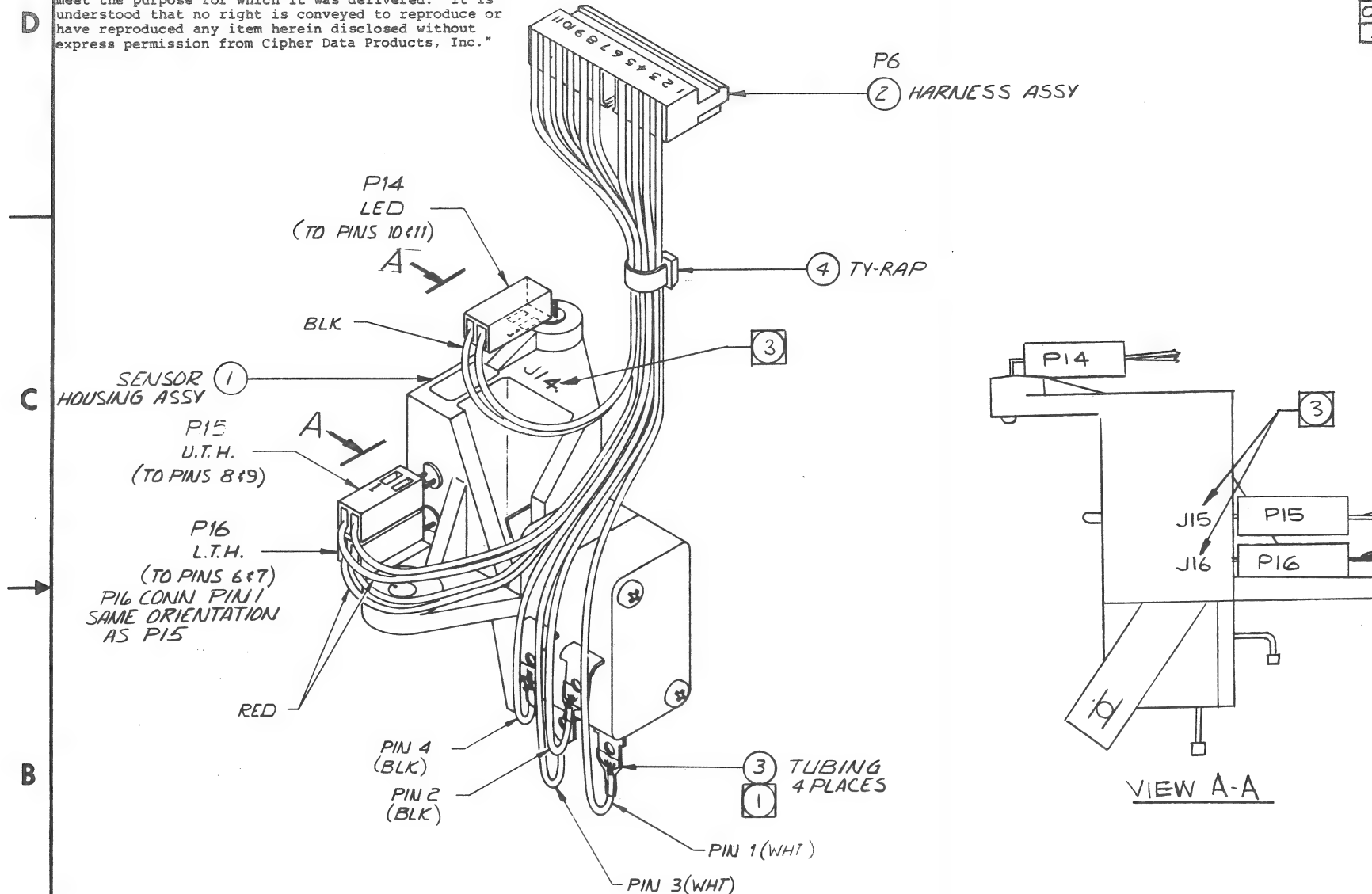
1160601-421



PAGE 1 OF 10

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REVISIONS					207324-100 A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL	ND	11/81	CK 11/83	
01	PIL REL ERO 820309	KAM	3/5/82		
01	ECO 12351	KAM	8/5/82	9/20/82	
02	ECO 12464	KAM	9/1/82	5/2/82	
A	PROD REL ERO 820421/A	KAM	11/82		



- ③ RUBBER STAMP OR STENCIL DESIGNATIONS .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
2. BAG & TAG PART NO., APPROPRIATE DASH NO & LATEST REVISION LEVEL PER CDP SPEC 100037-001
- ① SOLDER WIRES TO SWITCH, COVER WITH ITEM 3 TUBING.

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-29-82			CODE Q 100
1. TOLERANCES .XX+ — ANGULAR .XXX+ — ±	CHECK	KAM	7-29-82			
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.					
3. MACH. SURFACES	MATERIAL				SENSOR ASSY	QTY. REQ'D 1
4. ALL DIMS IN INCHES.	FINISH					
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB	SCALE 2/1	SIZE C	207324-100	A
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	NEXT ASSY	207304	DO NOT SCALE THIS DRAWING	CODE IDENT	52465	SHEET 1 OF 1

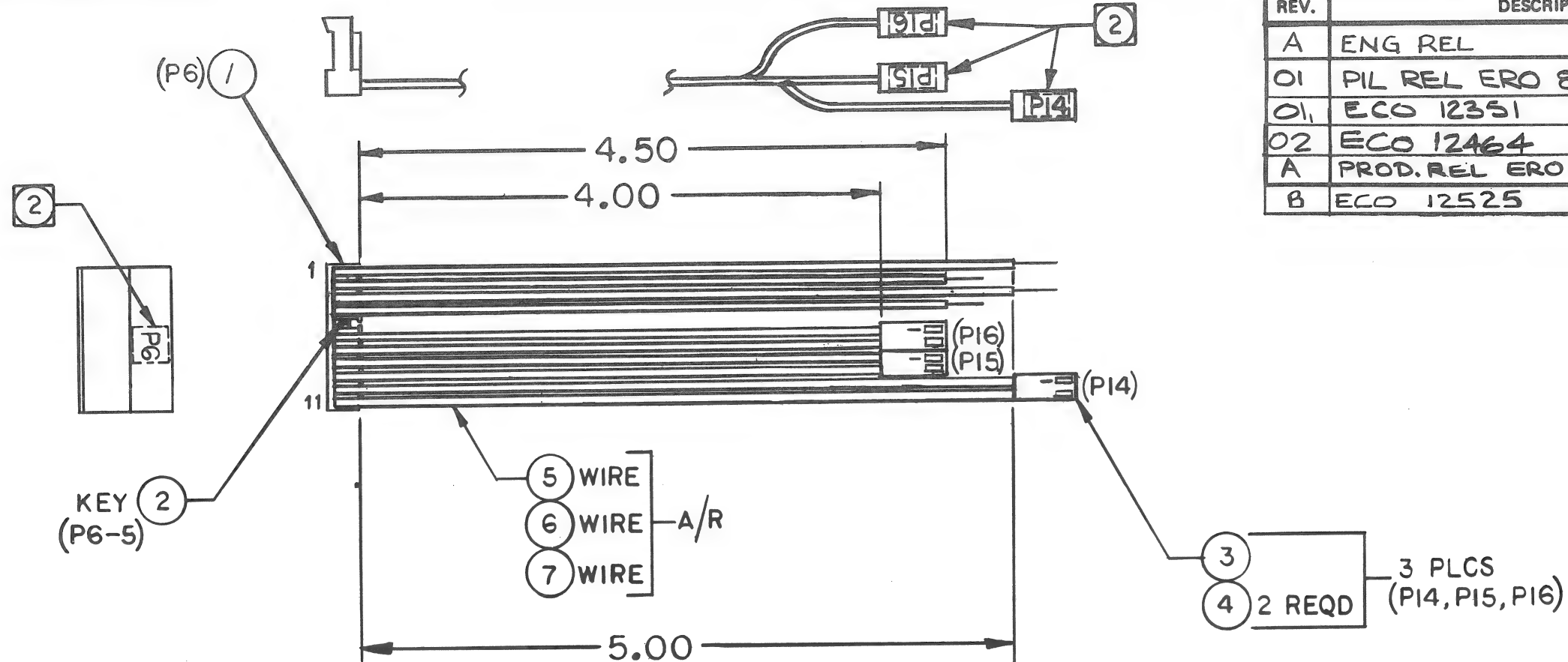
FORM 383 (R. 10/77)

160601-406

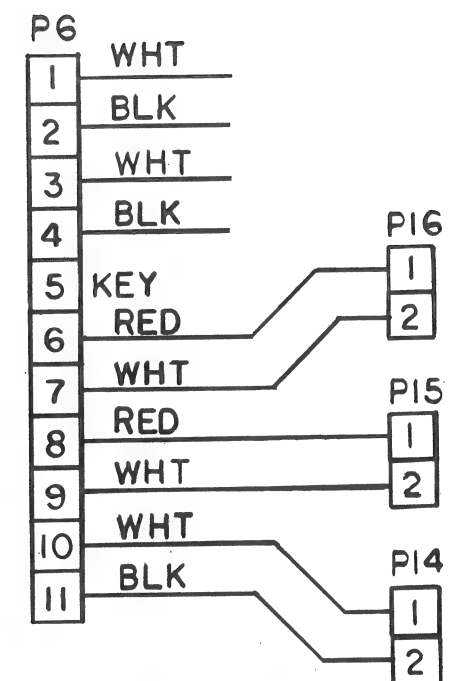


ASSEMBLY TYPE	ASSY, SENSOR	DSC:R	DSC CODE Q100
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FORM 706 (R 09/90) PAGE 1 OF 1



REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	11/9/81	CK 11/13/81
01	PIL REL ERO 820309	B8	KAM	3/5/82
01	ECO 12351	KM	KAM	8/5/82 9/8/82
02	ECO 12464	KW	KAM	9/2/82 3/8/83
A	PROD. REL ERO 820421/A	Kam	12/14/82	
B	ECO 12525	Kam	2-3-83	4/8/83



WIRING DIAGRAM

PART NUMBER SEE SEPARATE M/L

2 RUBBER STAMP OR STENCIL DESIGNATIONS .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.

- BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

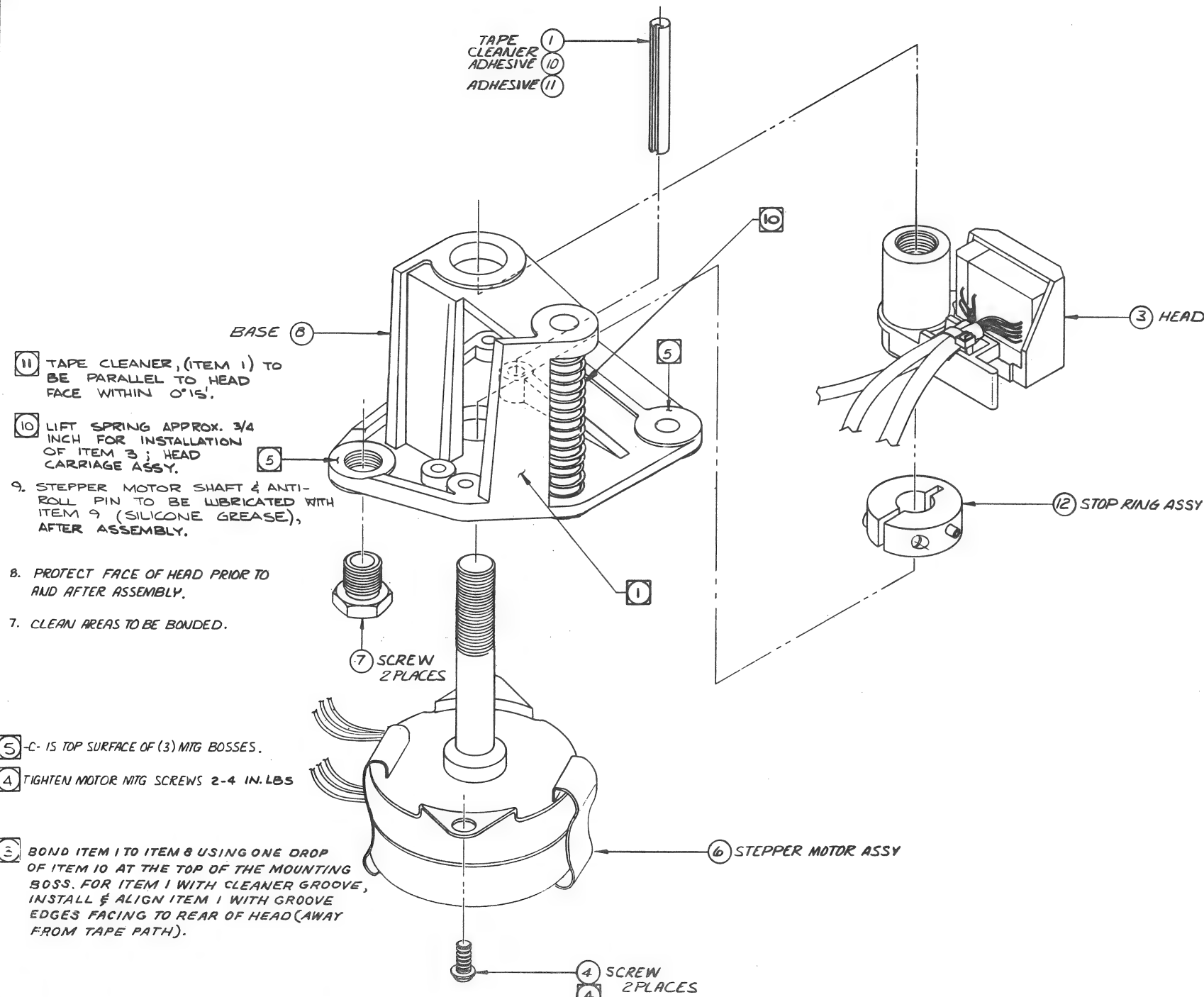
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.

DRAWN	MATTHES	7-29-82			CODE Q 115 QTY. REQ'D. 1	
CHECK	KAM	7-29-82				
APPR.	J.K	2-3-83				
MATERIAL			HARNESS ASSY-SENSOR			
FINISH						
MODEL NO. QB			SCALE 1/1	SIZE B	207326-100	B
NEXT ASSY 207324			DO NOT SCALE THIS DRAWING	CODE IDENT 52465			SHEET 1 OF 1



PREPARED BY	Sue Redmond	DATE	1-14-82	A	END	WORK	820121N	12/14/82					DWG REL NO.	DATE
CHECKED BY	<i>G. Lewis</i>		1-26-82	03	REL								820227	2 1 182
DESIGN ENGINEER	<i>G. Lewis</i>		1-29-82	01	REL								NEXT ASSEMBLY	M M M D D Y Y
				02	REL								207324	
				01	PILREL								MODEL NO.	0420-30/90
				REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE					

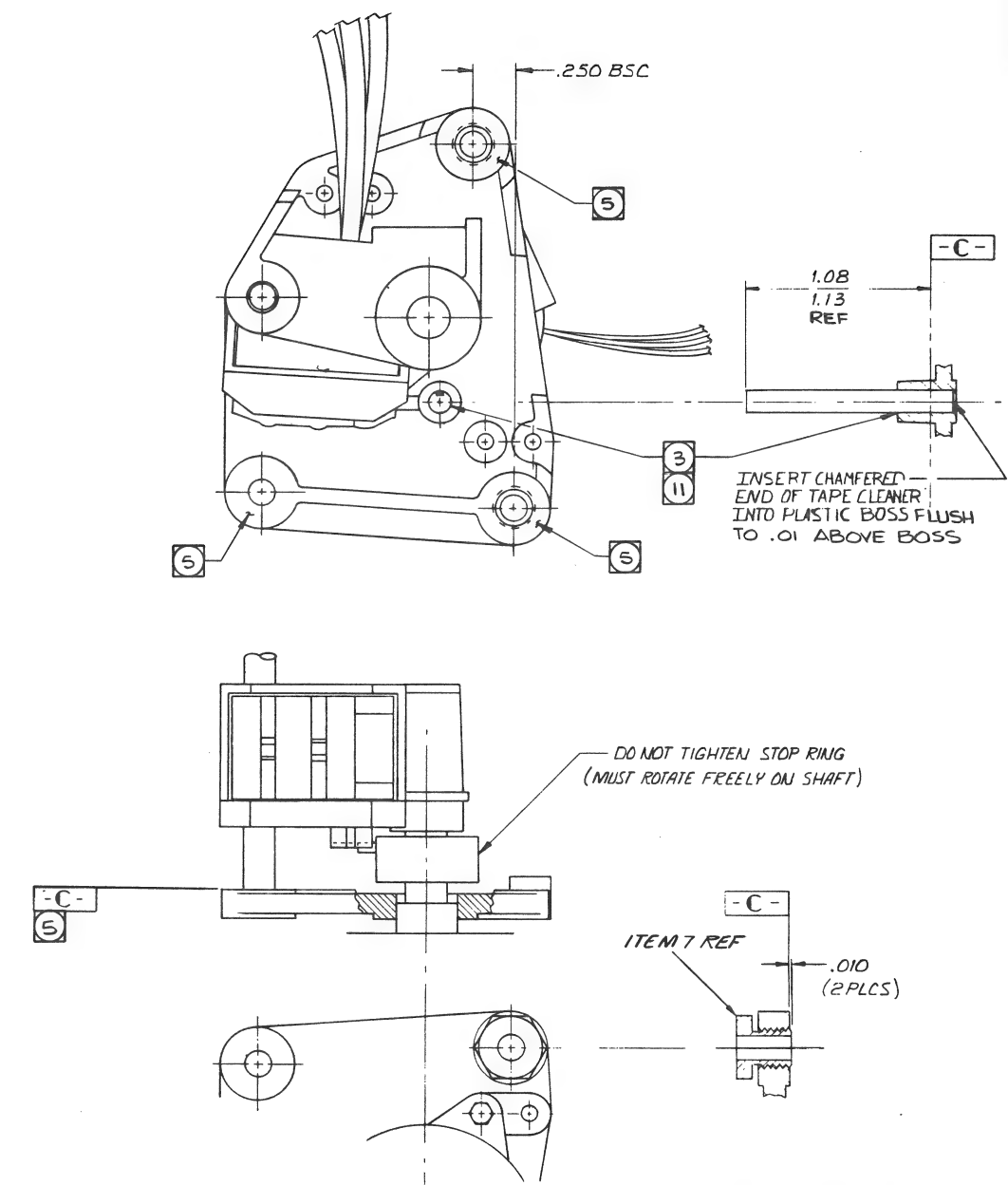
REVISIONS					207329-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
A	ENG REL	NF	4/13/81	L.K. 4/13/81		
01	PIL REL ERO 820309	KAM	3/5/81			
02	ECO 12128	KM	8/14/79			
02	ECO 12351	KAM	8/14/79			
A	PROD REL ERO 820421/A	KAM	8/14/79			
B	ECO 12719	Jack	8/14/79			




11. TAPE CLEANER, (ITEM 1) TO BE PARALLEL TO HEAD FACE WITHIN 0°15'.
10. LIFT SPRING APPROX. 3/4 INCH FOR INSTALLATION OF ITEM 3; HEAD CARRIAGE ASSY.
9. STEPPER MOTOR SHAFT & ANTI-ROLL PIN TO BE LUBRICATED WITH ITEM 9 (SILICONE GREASE), AFTER ASSEMBLY.
8. PROTECT FACE OF HEAD PRIOR TO AND AFTER ASSEMBLY.
7. CLEAN AREAS TO BE BONDED.
5. C- IS TOP SURFACE OF (3) MTG BOSSSES.
4. TIGHTEN MOTOR MTG SCREWS 2-4 IN. LBS
3. BOND ITEM 1 TO ITEM 8 USING ONE DROP OF ITEM 10 AT THE TOP OF THE MOUNTING BOSS. FOR ITEM 1 WITH CLEANER GROOVE, INSTALL & ALIGN ITEM 1 WITH GROOVE EDGES FACING TO REAR OF HEAD (AWAY FROM TAPE PATH).

1. MARK PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001

NOTES: UNLESS OTHERWISE SPECIFIED



DSC:R		PART NUMBER SEE SEPARATE M/L	
NOTES UNLESS SPECIFIED	DRAWN: MATTHES	7-30-82	
1. TOLERANCES XX± .005 ANGULAR ± 0°30'	CHECK: KAM	7-30-82	
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB	
	NEXT ASSY	207304	
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		DO NOT SCALE THIS DRAWING	CODE IDENT: 52465
		CARRIAGE ASSY	
		CODE Q 100	QTY. REQ'D. 1
		SHEET 1 OF 1	



ASSEMBLY PARTS LIST

S 7 0 1 1

207329 -001

REV B

ASSEMBLY TITLE

ASSY, CARRIAGE

DSC:R

Q100

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207331 - 001	1	TAPE CLEANER		1		
-	2					
207322 - 001	3	ASSY, HEAD/CARRIAGE		1		
145027 - 304	4	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD	NO. 6-19x1/4	2		
-	5					
207327 - 001	6	ASSY, STEPPER MOTOR		1		
207339 - 001	7	SCREW - ADJUSTMENT		2		
207334 - 001	8	ASSY, CARRIAGE BASE		1		
100409 - 001	9	GREASE, SILICONE	DOW III	A/R		
100465 - 002	10	ADHESIVE		A/R		
100465 - 003	11	ADHESIVE		A/R		
207332 - 001	12	ASSY, STOP RING		1		
207329 - 100	13	ASSEMBLY DRAWING		0		
-						

PREPARED BY

Sue Redmond

DATE

1-15-82

BY

12719

DATE

1-15-82

CHECKED BY

J. P. [signature]

DATE

1-26-82

BY

12719

DATE

1-26-82

DESIGN ENGINEER

J. P. [signature]

DATE

1-29-82

BY

12719

DATE

1-29-82

DWG REL NO.

820287

DATE

21 1 82

NEXT ASSEMBLY

207304

MODEL NO.

0420-30/90

REV

ECO

DATE / SIGNATURE

REV

ECO

DATE / SIGNATURE

FORM 796 (R 08/80)

PAGE 1 OF 1

REVISIONS				207350-100
REV	DESCRIPTION	CHK	DATE	APPROVED
A	ENG REL	NP	11/13/81	CE 11/13/81
01	PIL REL ERO 820309	KAM	3/5/82	
02	ECO 12390	KAM	7/1/82	
03	ECO 12351/A	KAM	11/1/82	
A	PROD. REL. PER ERO 820421/A	KAM	11/1/82	
B	ECO 12653	JAL	7/2/82	
C	ECO 12692	KAM		
D	ECO 12703			

STANDOFF
(4 REQD)

SPRING & ROLLER
GND CABLE

NAMEPLATE (3)

LABEL (13)

(5) BRACKET-MOUNTING, 8" F.D.

PUNCH ALL SHUNTS EXCEPT CENTER ONE
(2B-4 TO 2B-11)

2B

DETAIL A


MOTOR GND CABLE

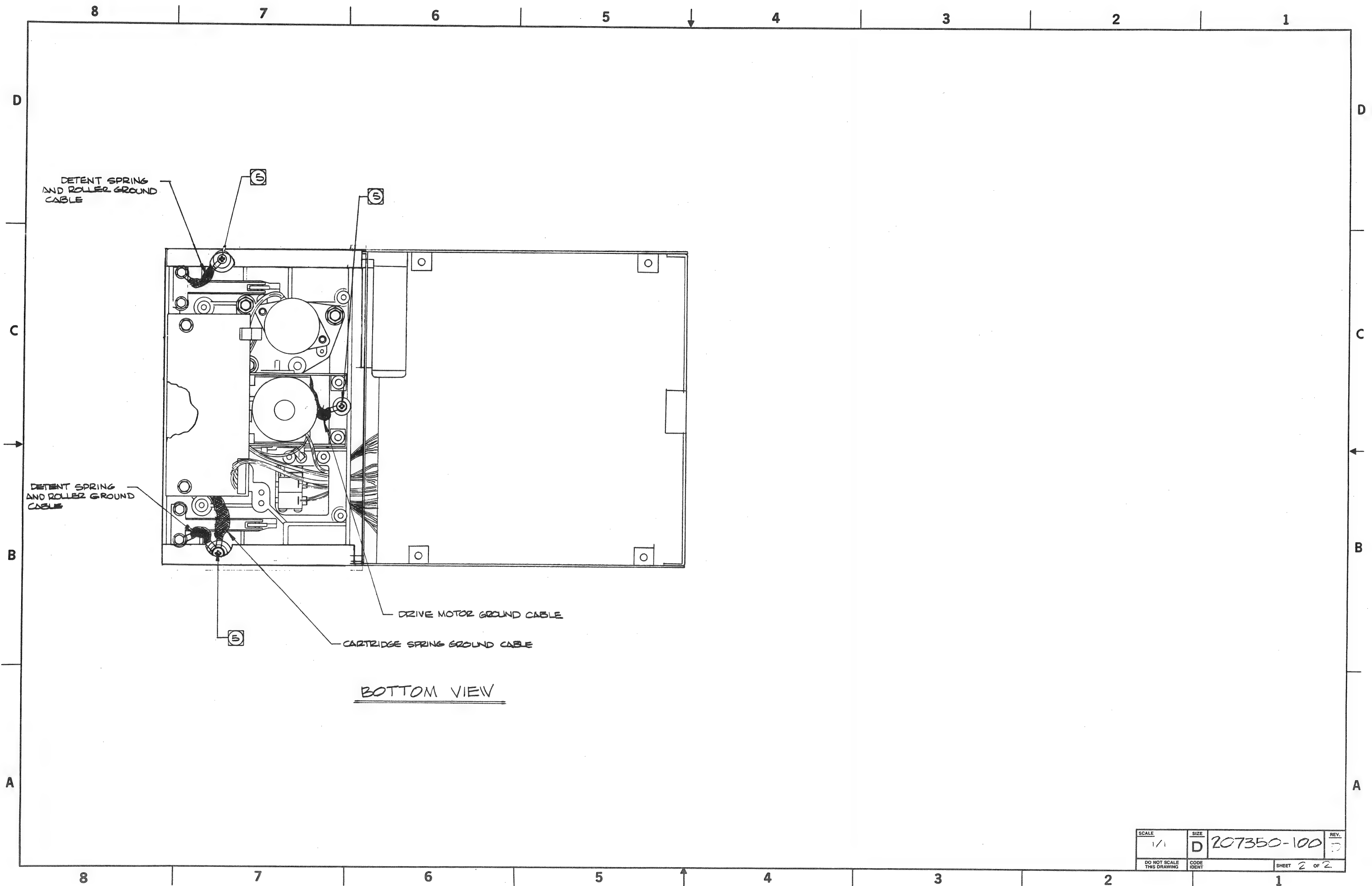
(2) SCREW
(3PLCS)

- 3 ROUTE POWER CABLE BETWEEN CONTROLLER BOARDS.
 2 BREAK CONTROLLER PWB (ITEM 4) AT SLOTS BETWEEN P4 & P5 CABLES. CUT OFF EXCESS TABS AND MOUNT SMALLER HALF ONTO (5) PLASTIC SUPPORT POSTS ON LARGER HALF.
 1 STAMP FINAL ASSY P/N & REV ON SURFACE INDICATED.

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX± — ANGULAR .XXX± — ± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	DRAWN	MATTHES	7-29-82		
	CHECK	KAM	7-29-82		
	APPR.			MTT-F420 PICTORIAL	
	MATERIAL				
	FINISH			SCALE 1/1 SIZE D 207350-100	
MODEL NO. QB		NEXT ASSY		DO NOT SCALE THIS DRAWING	CODE IDENT 52465 SHEET 1 OF 2



[illegible][illegible]

ASSEMBLY PARTS LIST

Gardner Greene Division

ASSEMBLY TITLE:

MTT-F420, 90 IPS, 4 TK

DOC. R

DOC CODE:

Q101

1 S 7 0 1 1 5 M P 72 207350 — 006 61 REV H

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY			U.M. CODE
					WHOLE	DECIMAL		
19	207020 — 001	1	ASSY, CABLE		1			
20	145026 — 303	2	SCREW, WASHER HD HEX INDENTED 6-32 X 3/16		3			
21	207341 — 003	3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1			
22	207005 — 002	4	ASSY, PWB — CONTROLLER		1			
23	940075 — 001	5	BRACKET, MOUNTING 8" F.D.		1			
24	207358 — 004	6	ASSY, CARTRIDGE TAPE DRIVE 9420, 90 IPS		1			
25	147805 — 002	7	STANDOFF-LK. CKT. BD. SUP	3/8" LONG	4			
26	100472 — 001	8	SHIPPING BAG, PLASTIC - 16 X 14		1			
27	950035 — 001	9	SHIPPING CARTON, OUTER BOX		1			
28	950036 — 001	10	SHIPPING CARTON, INNER FOLD		1			
29	207366 — 001	11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0			
30	207350 — 100	12	MTT-F420, PICTORIAL		0			
31	940012 — 101	13	LABEL, QUARTERBACK		1			
32	207305 — 100	15	MTT-F420 LABEL INSTRUCTIONS		0			
PREPARED BY Sue Redmond DATE 7-9-82					DWG. REL. NO.			DATE
CHECKED BY Tom Mahdhami 11/3/83					E 12653			
DESIGN ENGINEER J. H. Little 11/1/83					C 12654			
					B 12657			
					A REL 14183			
					REV ECO			DATE / SIGNATURE
					REV ECO			DATE / SIGNATURE
					NEXT ASSEMBLY			
					MODEL NO.			F420-90

FORM 795 (R 03/82)



Garden Grove Division

ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK		DSC: R		DOC CODE: Q101		1 6 02 61 REV		S 7 0 1 1 M P 207350 - 009 A	
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.	CODE	
					WHOLE	DECIMAL			
207020 - 001		1	ASSY, CABLE		1				
145026 - 304		2	SCREW, WASHER HD HEX, INDENTED 6-32 X 1/4		3				
207341 - 008		3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1				
207005 - 003		4	ASSY, PWB - CONTROLLER		1				
940075 - 001		5	BRACKET, MOUNTING 8" F.D.		1				
207359 - 005		6	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS		1				
147805 - 002		7	STANDOFF-LK. CKT. BD. SUP.	3/8 LG	4				
100472 - 001		8	SHIPPING BAG, PLASTIC-16 X 14		1				
950035 - 001		9	SHIPPING CARTON, OUTER BOX		1				
950036 - 001		10	SHIPPING CARTON, INNER FOLD		1				
207366 - 001		11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0				
207350 - 100		12	MTT-F420, PICTORIAL		0				
207305 - 100		15	LABEL INSTRUCTIONS		0				
PREPARED BY S. HENCKE		DATE 04-18-83		DWG REL NO. 820498		DATE 4 18 83			
CHECKED BY [Signature]		DATE 4/18/83		M M D D Y Y					
DESIGN ENGINEER [Signature]		DATE 6/15/83		NEXT ASSEMBLY					
		A PROD. REL. 6/15/83		MODEL NO. F420-30					
REV		ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE			

FORM 796 (R 03/82)

PAGE 1 OF 1



Garden Grove Division

ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK		DSC: R		DOC CODE: Q101		1 6 02 61 REV		S 7 0 1 1 M P 207350 - 010 C	
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.	CODE	
					WHOLE	DECIMAL			
207020 - 001		1	ASSY, CABLE		1				
145026 - 304		2	SCREW, WASHER HD HEX, INDENTED 6-32 X 1/4		3				
207341 - 010		3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1				
207005 - 001		4	ASSY, PWB - CONTROLLER		1				
940075 - 001		5	BRACKET, MOUNTING 8" F.D.		1				
207359 - 005		6	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS		1				
147805 - 002		7	STANDOFF-LK. CKT. BD. SUP.	3/8 LG	4				
100472 - 001		8	SHIPPING BAG, PLASTIC - 16 X 14		1				
950035 - 001		9	SHIPPING CARTON, OUTER BOX		1				
950036 - 001		10	SHIPPING CARTON, INNER FOLD		1				
207366 - 001		11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0				
207350 - 100		12	MTT-F420, PICTORIAL		0				
207305 - 100		15	LABEL INSTRUCTIONS		0				
PREPARED BY S. HENCKE		DATE 03-25-83		DWG REL NO. 820477		DATE 03 25 83			
CHECKED BY [Signature]		DATE 3-25-83		M M D D Y Y					
DESIGN ENGINEER [Signature]		DATE 3-30-83		NEXT ASSEMBLY					
		C 12784 3/30/83		MODEL NO. F420-30					
		B 12760 3/30/83							
		A PROD. REL. 3/30/83							
REV		ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE			

FORM 796 (R 03/82)

PAGE 1 OF 1



Garden Grove Division

ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 90 IPS, 4 TK		DSC: R		DOC CODE: Q101		1 6 02 61 REV		S 7 0 1 1 M P 207350 - 011 C	
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.	CODE	
					WHOLE	DECIMAL			
207020 - 001		1	ASSY, CABLE		1				
145026 - 304		2	SCREW, WASHER HD HEX INDENTED 6-32 X 1/4		3				
207341 - 011		3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1				
207005 - 002		4	ASSY, PWB - CONTROLLER		1				
940075 - 001		5	BRACKET, MOUNTING 8" F.D.		1				
207358 - 005		6	ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS		1				
147805 - 002		7	STANDOFF-LK. CKT. BD. SUP.	3/8 LG	4				
100472 - 001		8	SHIPPING BAG, PLASTIC - 16 X 14		1				
950035 - 001		9	SHIPPING CARTON, OUTER BOX		1				
950036 - 001		10	SHIPPING CARTON, INNER FOLD		1				
207366 - 001		11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0				
207350 - 100		12	MTT-F420, PICTORIAL		0				
207305 - 100		15	MTT-F420 LABEL INSTRUCTIONS		0				
PREPARED BY S. HENCKE		DATE 03-25-83		DWG REL NO. 820477		DATE 03 25 83			
CHECKED BY [Signature]		DATE 3-25-83		M M D D Y Y					
DESIGN ENGINEER [Signature]		DATE 3-30-83		NEXT ASSEMBLY					
		C 12784 3/30/83		MODEL NO. F420-90					
		B 12760 3/30/83							
		A PROD. REL. 3/30/83							
REV		ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE			

FORM 796 (R 03/82)

PAGE 1 OF 1



Garden Grove Division

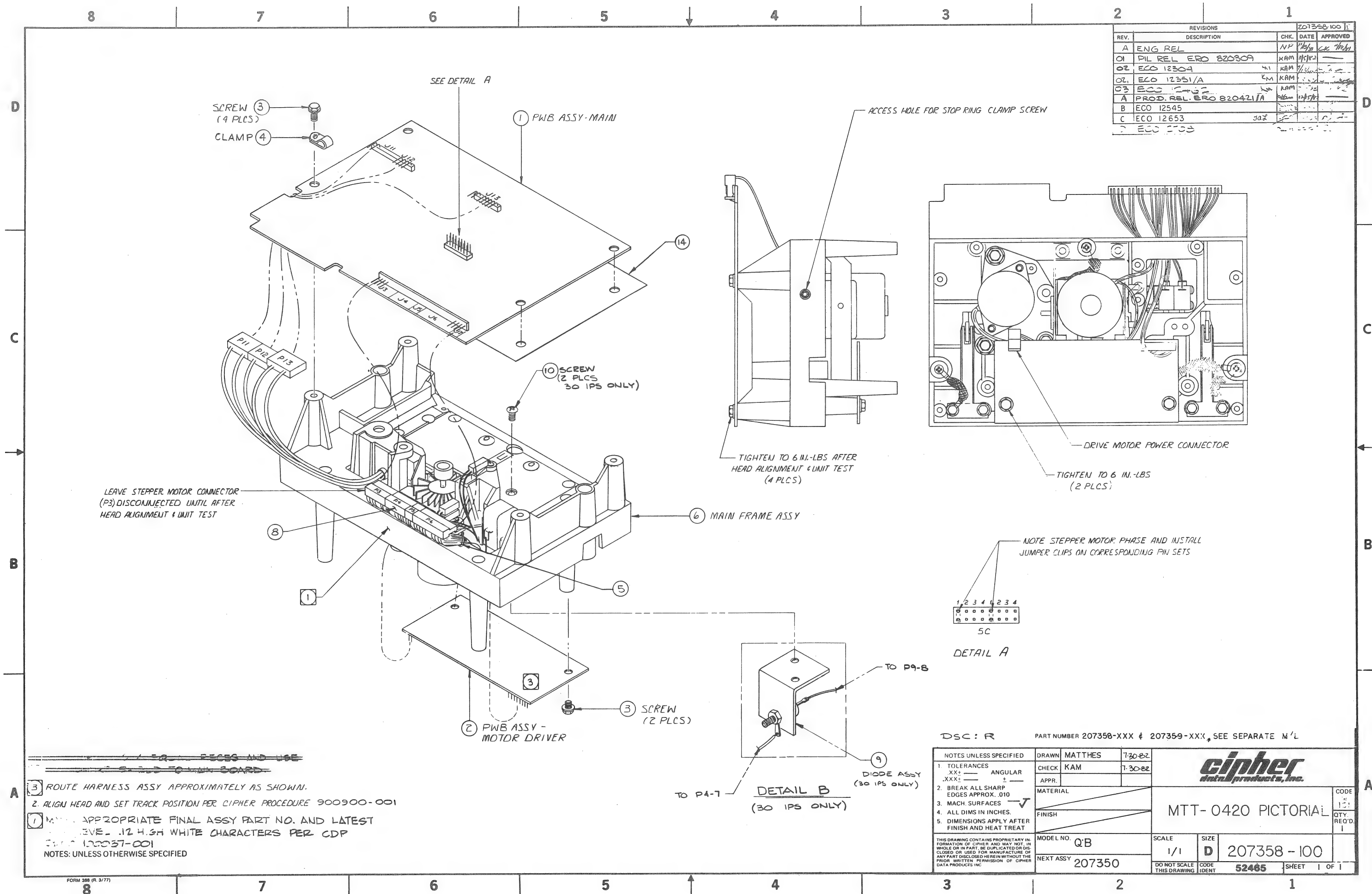
ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK		DSC: R		DOC CODE: Q101		1 6 02 61 REV		S 7 0 1 1 M P 207350 - 012 A	
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.	CODE	
					WHOLE	DECIMAL			
207020 - 001		1	ASSY, CABLE		1				
145026 - 304		2	SCREW, WASHER HD HEX, INDENTED 6-32 X 1/4		3				
207341 - 008		3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1				
207005 - 001		4	ASSY, PWB - CONTROLLER		1				
207359 - 005		6	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS		1				
100472 - 001		8	SHIPPING BAG, PLASTIC - 16 X 14		1				
950035 - 001		9	SHIPPING CARTON, OUTER BOX		1				
950036 - 001		10	SHIPPING CARTON, INNER FOLD		1				
207366 - 001		11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0				
207350 - 100		12	MTT-F420, PICTORIAL		0				
207305 - 100		15	LABEL INSTRUCTIONS		0				
PREPARED BY S. HENCKE		DATE 08-23-83		DWG REL NO. 820520		DATE 08 23 83			
CHECKED BY [Signature]		DATE 8/23/83		M M D D Y Y					
DESIGN ENGINEER [Signature]		DATE 8/28/83		NEXT ASSEMBLY					
		A PRO REL. 8/28/83		MODEL NO. F420-30					
REV		ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE			

FORM 796 (R 03/82)

PAGE 1 OF 1

REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	11/2/82	CK
01	PIL REL ERO 820309	KAM	11/2/82	
02	ECO 12304	KAM	11/2/82	
02L	ECO 12351/A	KAM	11/2/82	
03	ECO 12351/A	KAM	11/2/82	
A	PROD. REL. ERO 820421/A	KAM	12/5/82	
B	ECO 12545			
C	ECO 12653	JaZ		
D	ECO 12703			



DSC: R		PART NUMBER 207358-XXX & 207359-XXX, SEE SEPARATE M/L	
NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-30-82
1. TOLERANCES XXX: — ANGULAR XXX: — ±	CHECK	KAM	7-30-82
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB	
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	SCALE	1/1	
	SIZE	D	
	DO NOT SCALE THIS DRAWING	CODE IDENT	
		52465	
		207358-100	
		SHEET	1 OF 1

cipher
data products, inc.

MTT-0420 PICTORIAL

207358-100

52465

SHEET 1 OF 1

PAGE 1 OF 1PAGE 1 OF 1PAGE 1 OF 1

ASSEMBLY PARTS LIST

1995-1996



<http://www.mhhe.com/9780130352373>

1



ASSEMBLY PARTS LIST

Garden Grove Division		DSC: R		DOC CODE: Q101		S 7 0 1 1 M P		207359 - 004		REV D	
ASSEMBLY TITLE: ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS											
ASSEMBLY PART NUMBER											
PART NUMBER ITEM NO. DESCRIPTION REMARKS QUANTITY U.M. CODE											
207066 - 003 1 ASSY, PWB - MAIN 1											
207076 - 001 2 ASSY, PWB - MOTOR DRIVER 1											
145027 - 308 3 SCREW, THREAD CUTTING INDENTED HEX WASHER HEAD 6											
100000 - 019 4 CLAMP, CABLE 1											
100171 - 001 5 STRAP-CABLE, SELF-LOCKING 1											
207393 - 001 6 ASSY, MAIN FRAME 1											
900900 - 001 7 PROCEDURE, TRACK AND AZIMUTH ALIGNMENT 0											
207073 - 001 8 ASSY, CABLE - MOTOR DRIVER PWB 1											
207072 - 001 9 ASSY, DIODE - MOTOR DRIVER 1											
100036 - 304 10 SCREW, PAN HEAD PHIL 6-32 x 1/4 2											
207358 - 100 11 MTT-0420, PICTORIAL 0											
207383 - 001 14 SHIELD 1											
PREPARED BY Sue /Redmond DATE 7-9-82											
CHECKED BY Sam Mahkowi DATE 7/14/82											
DESIGN ENGINEER L. Parker DATE 11/11/82											
DWG REL NO. 820420 DATE 9 15 82											
NEXT ASSEMBLY 207350/207351											
MODEL NO. F/0420-30											
REV ECO DATE / SIGNATURE REV ECO DATE / SIGNATURE											

FORM 796 (R 03/82)

PAGE 1 OF 1



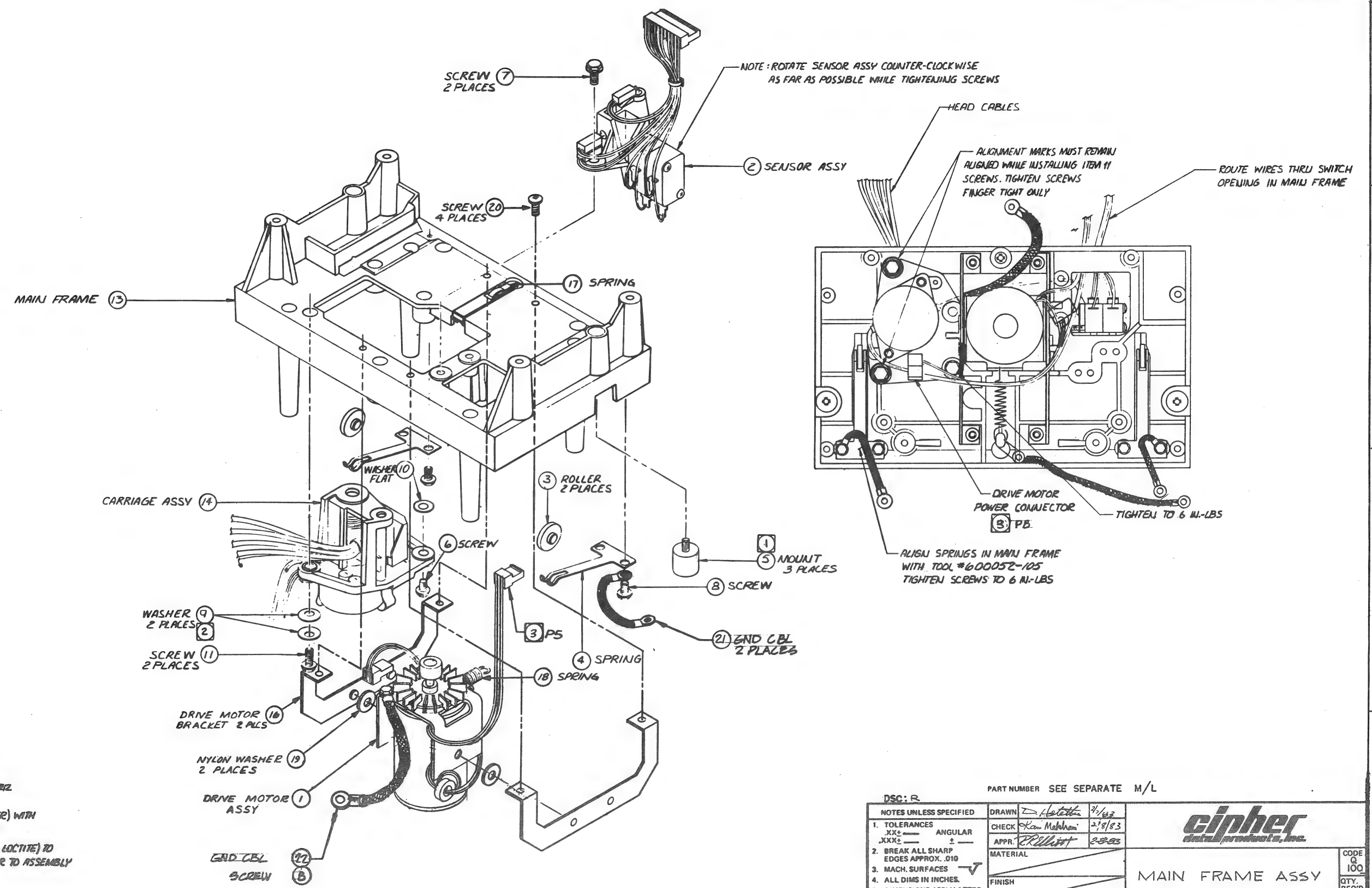
ASSEMBLY PARTS LIST

Garden Grove Division		DSC: R		DOC CODE: Q101		S 7 0 1 1 M P		207359 - 005		REV A	
ASSEMBLY TITLE: ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS											
ASSEMBLY PART NUMBER											
PART NUMBER ITEM NO. DESCRIPTION REMARKS QUANTITY U.M. CODE											
207066 - 003 1 ASSY, PWB - MAIN 1											
207076 - 001 2 ASSY, PWB - MOTOR DRIVER 1											
145027 - 308 3 SCREW, THREAD CUTTING INDENTED HEX WASHER HEAD 6											
100000 - 019 4 CLAMP, CABLE 1											
100171 - 001 5 STRAP-CABLE, SELF-LOCKING 1											
207393 - 002 6 ASSY, MAIN FRAME 1											
900900 - 001 7 PROCEDURE, TRACK AND AZIMUTH ALIGNMENT 0											
207073 - 001 8 ASSY, CABLE - MOTOR DRIVER PWB 1											
207072 - 001 9 ASSY, DIODE - MOTOR DRIVER 1											
100036 - 304 10 SCREW, PAN HEAD PHIL 6-32 X 1/4 2											
207358 - 100 11 MTT-0420, PICTORIAL 0											
207383 - 001 14 SHIELD 1											
PREPARED BY S. HENCKE DATE 03-25-83											
CHECKED BY DATE 03-25-83											
DESIGN ENGINEER DATE 3-30-83											
DWG REL NO. 820420 DATE 9 15 82											
NEXT ASSEMBLY 207350/207351											
MODEL NO. F/0420-30											
REV ECO DATE / SIGNATURE REV ECO DATE / SIGNATURE											

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REVISIONS			
REV.	DESCRIPTION	CHK.	DATE
A	PROD. REL PER BRD 820464	KW	2/8/83
B	ECO 12708	KW	8/8/83



- 3 MARK REFERENCE DESIGNATIONS PER CDP SPEC 100013-001.
- 2 INSTALL ITEMS 9 (BELLEVILLE WASHER) WITH CONCAVE SIDES TOWARD EACH OTHER
- 1 APPLY ONE DROP OF ITEM 12 (GREEN LOCTITE) TO THREADS OF ITEM 5 (SHOCK MOUNT) PRIOR TO ASSEMBLY

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R		PART NUMBER SEE SEPARATE M/L	
NOTES UNLESS SPECIFIED		DRAWN <i>[Signature]</i> 2/1/83	
1. TOLERANCES XX2 ± ANGULAR XXX2 ±		CHECK <i>[Signature]</i> 2/8/83	
2. BREAK ALL SHARP EDGES APPROX. .010		APPR. <i>[Signature]</i> 2/8/83	
3. MACH. SURFACES		MATERIAL	
4. ALL DIMS IN INCHES		FINISH	
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		MODEL NO. QB	
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DISCLOSED OR IN PART, BE REPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.		NEXT ASSY 207358, 207359	
SCALE 1/1		SIZE D	
DO NOT SCALE THIS DRAWING		CODE IDENT 52465	
SHEET 1 OF 1		MAIN FRAME ASSY	

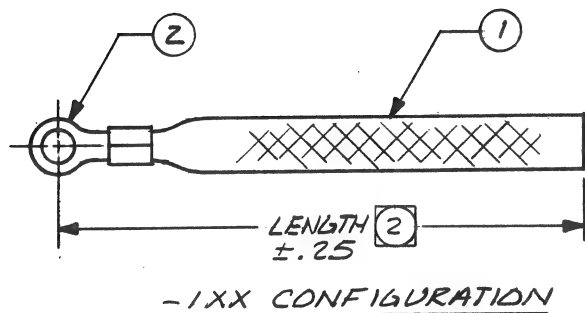
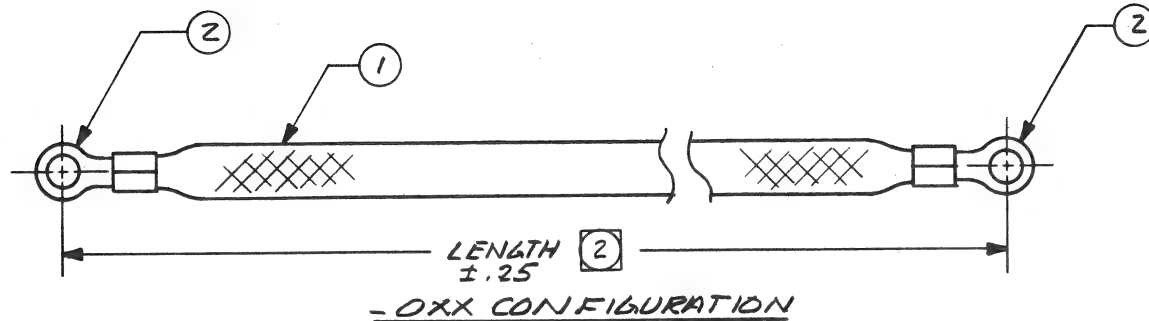
4

3

2

1

REVISIONS				207394-100 A
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	PROD REL PER EEO 820434	Kam	11/2/92	



PART NUMBER

SEE SEPARATE M/L'S

2 LAST TWO DIGITS OF DASH NO. OF CABLE INDICATE CABLE LENGTH IN INCHES (IE. -008 = 8.0 ± .25 INCHES).

1. TAG WITH PART NO., APPROPRIATE DASH NO. & LATEST REV LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

NOTES UNLESS SPECIFIED		DRAWN	D.L. Latta	11/1/92
1. TOLERANCES .XX± = ANGULAR .XXX± = ±		CHECK	Shirley	11/2/92
2. BREAK ALL SHARP EDGES APPROX. .010		APPR.	D.L. Latta	11-12-92
3. MACH. SURFACES -J		MATERIAL		
4. ALL DIMS IN INCHES.		FINISH		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		MODEL No.	QB	
DSC:R		NEXT ASSY	2073860 940016, 940017	
		SCALE	2/1	
		SIZE	C	
		DO NOT SCALE THIS DRAWING	CODE IDENT	52465
		ASSY, CABLE - GROUND STRAP		207394-100 A
		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.		CODE Q 115 QTY REQ'D. — REV. A
		SHEET 1 OF 1		

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SECTION 3

MASTER PARTS LIST

3.1 RECOMMENDATIONS

The recommended parts for the Cipher Quarterback Tape Drive are listed in the Master Parts List.

3.2 COMPONENT VARIANCE

For resistors, capacitors, small hardware, and other items not included in the list, equivalents in type, value, size, tolerance, and quality may be substituted.

3.3 INTEGRATED CIRCUIT

For integrated circuit where the manufacture is not specifically listed any manufacturer's device of the specific type may be used.

TABLE 3-1

MASTER PARTS LIST	
Assembly, Main PWB - 30 ips R/B 207066-003	207002-001
Assembly, Main PWB - 90 Ips R/B 207066-004	207002-002
Assembly, Controller PWB	207005-001
Assembly, Controller PWB	207005-002
Assembly, Microcomputer Expander PWB	207011-001
Assembly, Motor Driver PWB R/B 207076-001	207017-001
Assembly, Cable - Motor Driver PWB R/B 207073-001	207018-001
Assembly, Cable	207020-001
Assembly, Cable	207020-002
Assembly, Cable	207020-003
Assembly, Cable	207020-004
Assembly, Power Cable - Controller PWB	207021-001
Assembly, 32 x 8 PROM (Read Decode)	207024-001
Assembly, 32 x 8 PROM (Write Decode)	207025-001
Assembly, 256 x 4 Write Sequencer	207026-001
Assembly, 256 x 4 Host Sequencer	207027-001
Assembly, 2K x 8 PROM	207028-001
Assembly, 512 x 4 Read Sequencer	207029-001
Assembly, 8 Bit Microcomputer R/B 207030-002	207030-001
Assembly, 8 Bit Microcomputer	207030-002
Assembly, 8 Bit Microcomputer - 2K x 8 EPROM	207041-001
Assembly, 8 Bit Microcomputer - 2K x 8 EPROM	207041-002
Assembly, Head -2 Ch. (Erase-Read-Write)	207057-001
Assembly, Main PWB - 30 ips R/B 207066-003	207066-001

TABLE 3-1. (Continued)

Assembly, Main PWB - 90 ips R/B 207066-004	207066-002
Assembly, Main PWB - 30 ips	207066-003
Assembly, Main PWB - 90 ips	207066-004
Assembly, Motor Driver PWB R/B 207076-001	207069-001
Assembly, Cable - Motor Driver PWB R/B 207073-001	207070-001
Assembly, Diode - Slow Speed Motor Kit, 30 ips	207072-001
Assembly, Cable - Motor Driver PWB	207073-001
Assembly, Motor Driver PWB	207076-001
Quarterback Maintenance Manual	207100-001
Quarterback Engr. Drawings	207100-002
Quarterback Theory of Operation	207100-003
Plate, Front	207300-001
Light Pipe	207301-001
Assembly, Main Frame	207304-001
Assembly, Main Frame	207304-002
Spring, Detent	207308-001
Frame, Main	207311-001
Frame, Main - Molded	207312-001
Assembly, Drive Motor (Spare)	207314-001
Frame, Drive Motor	207315-001
Heatsink, Zener Diode	207318-001
Capstan R/B 207389-001	207320-001
Assembly, Head/Carriage	207322-001
Housing, Sensor	207323-001
Assembly, Sensor (Spare)	207324-001
Assembly, Sensor Housing	207325-001
Assembly, Sensor Harness	207326-001
Assembly, Stepper Motor	207327-001
Assembly, Stepper Motor - Terminated	207328-001
Assembly, Carriage (Spare)	207329-001
Assembly, Carriage and Nut	207330-001
Assembly, Stop Ring	207332-001
Assembly, Carriage Base	207334-001
Assembly, Carriage Base	207335-001
Assembly, Carriage Base - Molded	207336-001
Shaft, Carriage Drive - ACME	207337-001
Shield, Cable	207338-001
Screw, Adjustment	207339-001
Certified Tape Cartridge - 450 ft.	207340-001
Nameplate - QB Tape Drive	207341-001
Kit, Front Panel	207346-001
Assembly, MTT F420 - 30 ips/4TK	207350-001
Assembly, MTT F420 - 90 ips/4TK	207350-002
Assembly, MTT F420 - 30 ips/4TK	207350-005
Assembly, MTT F420 - 90 ips/4TK	207350-006
Assembly, MTT F420 - 30 ips/4TK	207350-009
Assembly, MTT F420 - 30 ips/4TK	207350-010
Assembly, MTT F420 - 90 ips/4TK	207350-011
Assembly, MTT F420 - 30 ips/4TK	207350-012

TABLE 3-1. (Continued)

Assembly, MTT F420 - 30 ips/4TK	207351-001
Assembly, MTT F420 - 90 ips/4TK	207351-002
Assembly, MTT F420 - 30 ips/4TK	207351-005
Assembly, MTT F420 - 90 ips/4TK	207351-006
Assembly, MTT F420 - 30 ips/4TK	207351-010
Assembly, MTT F420 - 90 ips/4TK	207351-011
Assembly, Cartridge Drive 0420 - 90 ips	207358-002
Assembly, Cartridge Drive 0420 - 90 ips	207358-003
Assembly, Cartridge Drive 0420 - 90 ips	207358-004
Assembly, Cartridge Drive 0420 - 90 ips	207358-005
Assembly, Cartridge Drive 0420 - 30 ips	207359-002
Assembly, Cartridge Drive 0420 - 30 ips	207359-003
Assembly, Cartridge Drive 0420 - 30 ips	207359-004
Assembly, Cartridge Drive 0420 - 30 ips	207359-005
Motor, Stepper	207360-001
Motor, DC, Tach R/B207385-001	207362-001
Drive Nut, Carriage	207363-001
Spring, Compression - Carriage	207375-001
Bracket, Drive Motor	207377-001
Nameplate - Cipher Data Products Logo	207378-001
Cover, Sensor	207381-001
Drive Motor, DC, Tach	207385-001
Frame, Drive Motor	207387-001
Capstan	207389-001
Assembly, Main Frame	207393-001
Assembly, Main Frame	207393-002
Assembly, Ground Strap Cable	207394-002
Assembly, Ground Strap Cable	207394-003
Assembly, Ground Strap Cable	207394-008
Assembly, Ground Strap Cable	207394-104
Assembly, Ground Strap Cable	207394-105
Tracking Tape Cartridge	940049-001
Azimuth Tape Cartridge	940050-001
Bracket, Mounting - 8" F.D.	940075-001
Tape Cartridge Certified by DE I-450 ft.	950125-001



7301 Oranewood Avenue
Garden Grove, California 92641

P.O. Box 3010
Garden Grove, California 92642

Telephone: (714) 891-3711
TWX: 910-596-1870

10225 Willow Creek Road
San Diego, California 92131

P.O. Box 85170
San Diego, California 92138

Telephone: (714) 578-9100
TWX: 910-335-1251
